The Chemical Age

A Weekly Journal Devoted to Industrial and Engineering Chemistry

VOL. XVII. No. 431 OCTOBER 1, 1927 Prepaid Annual Subscription: United Kingdom, £1.1.0; Abroad, £1.6.0.

Contents

	PAGE
EDITORIAL NOTES: American Combination Possibilities; The Work of the Public Analyst; Changing Industrial Methods; The Lead Paint Regulations; A Better Trade Atmosphere	301
"New and Rapid Methods of Organic Analysis." By Dr. W. W. Myddleton	304
The Making of a Chemical	305
The Carbon Bisulphide Regulations	306
"C.A." Queries	307
From Week to Week	308
References to Current Literature	309
Patent Literature	310
Weekly Chemical Prices and Market Reports	313
Company News; New Chemical Trade Marks; Chemical Trade Inquiries, etc.	318
Commercial Intelligence; New Companies Registered	320
MONTHLY METALLURGICAL SECTION: "Radium and Uranium: Their Extraction, Properties, and Uses." By Dr. G. M. Dyson, etc.	25–32

NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

The prepaid subscription to THE CHEMICAL AGE *is 21s. per annum for the United Kingdom, and 26s. abroad. Cheques, Money Orders and Postal Orders should be made payable to Benn Brothers, Ltd.*

Editorial and General Offices: Bouverie House, 154, Fleet Street, London, E.C.4.

Telegrams: "Allangas, Fleet, London." Telephone: City 0244

American Combination Possibilities

A SHORT time ago, in a note in these columns, it was indicated that some people in the United States, rather alarmed by the consolidation which was occurring in European chemical industry, were thinking of ways and means of overcoming the Anti-Trust Laws with a view to effecting similar consolidation in the United States. Judging from rumours which have been abroad lately, at least one such move seems to be in the air. It is suggested that this may be a merger of the E. I. du Pont de Nemours Co., the General Motors Corporation, and the United States Steel Corporation, the figure of $4,000,000,000 being mentioned as a basis of capitalisation. As to what degree of credence is to be attached to this suggestion, it is impossible to say. The du Pont Co. has large holdings in the General Motors Corporation, and, as Mr. Irenee du Pont has admitted, in a letter to the Federal Trade Commission, the company is responsible for financing policies of the motor corporation. On the other hand, while the du Pont Co. also has holdings in the Steel Corporation, it has no part, says Mr. du Pont, in the management of the latter.

For the moment, further speculation would be unwise. It should, however, be pointed out that even if such a merger occurs, it is not really parallel with the mergers which have taken place in Great Britain and Germany. The latter have been restricted to the production of chemical and allied products, although the term chemical is interpreted in a very wide sense. The suggested American merger, on the other hand, would represent an alliance between very different industries, the effect of which cannot be estimated without further evidence. In any case, there can be no doubt that the energetic reorganisation which is occurring in Europe is giving rise to grave uneasiness in the United States. The Eleventh Exposition of Chemical Industries, which was opened in New York on Monday, enabled some 350 exhibitors to show the undoubtedly great advances that have occurred, in the last few years, on the other side of the Atlantic. In spite of this, however, *Industrial and Engineering Chemistry* states that it has reason to believe that the negotiations between British and German chemical groups may lead to a consolidation of interests which could overwhelm any other group in the world except, possibly, the United States of America. From British Press comments the American journal infers that European chemical industry is once more prepared to gather to itself the markets of the world. Coming from such an authoritative source, this may be regarded as a flattering tribute to European chemical industry.

The exact nature of future developments, both in Europe and the United States, is still a matter of surmise. The important thing, however, is that it seems to be felt throughout the world that in the chemical and allied industries the initiative is definitely with Europe. The psychological effect of this feeling will undoubtedly be great.

The Work of the Public Analyst

THE value of the work of the public analyst to the community is now clearly realised on all hands. The report of the City Analyst for Salford, which has just appeared, indicates once more the extraordinarily varied nature of this work, and the heavy demands which it makes on the skill, tact, and experience of the chemist. As an example, there may be cited the cases recorded of edibles, the description of which given in newspaper advertisements was regarded as unjustifiable and misleading, having regard to the data obtained on analysis. As a result of representations made to the manufacturers, the advertisements were suitably modified. This is a particularly clear example of the manner in which the public analyst guards the public against deception. Yet another case deserves mention, as exemplifying the difficulty of making certain tests. Some samples of cod liver oil and malt were described in an advertisement as "rich in vitamins." In order to determine the truth of this statement, the samples were sent to a well-

known investigator on the subject of vitamins, who carried out feeding tests over a period of three weeks, in order to test the value of the substance as a vitamin-containing food. The report indicated that both the growth-promoting vitamin A and the anti-rachitic vitamin D were present. Although, therefore, the preparation was regarded as inferior in value to the liquid preparation, it was impossible to deny that it was "rich in vitamins."

The ingenuity shown by certain wrongdoers is remarkable. One traveller adopted a special procedure in order to sell packets of malted milk. He sent into various shops asking for twopenny packets and having thus created an artificial demand, called at the same shops in the capacity of vendor of the malted milk. Of course, he succeeded in disposing of a good many packets. On examination, the preparation was found to contain over 50 per cent. of cane sugar, about 10 per cent. of starch, and a considerable amount of crude fibre. The amount of fat was very small. Genuine malted milk should contain neither sugar, starch, nor fibre, but should consist of dried milk and malt extract only. The notes on this case end with a statement which deserves quotation. "It seemed hardly fair to prosecute shopkeepers, who had been imposed upon in this way." A somewhat similar statement is made in various other cases, and indicates clearly how far from the mind of the analyst is the mere vindictive desire to find scapegoats. The whole tendency of the work lies not so much in the enforcement of a penal code as in the evolution of a state of mind in which the manufacturer regards the analyst not as a possible prosecutor, but as one who desires to assist him in conforming to laws made for the good of the community.

Particular emphasis may be laid on the great attention which is given to the examination of milk, an aspect of the work of the analyst which is well illustrated in the report now under discussion. A great deal has been said lately of the improvements in physique and health which are exhibited by the present generation as compared with earlier generations, an improvement which is rightly attributed to better hygiene and feeding. It is rarely, however, that the public takes the trouble to remember that a large share of the credit for this improvement belongs to the public analysts, whose work alone it is that permits of the establishment and maintenance of high standards in foods.

Changing Industrial Methods

THE accounts which have recently been published of the application of silica gel drying to the blast of a Scottish iron works illustrate in a striking way the manner in which industrial methods are altering. To most people, such a case would hardly be thought amenable to treatment by the exact methods which are coming into such wide use. Yet here we have an instance in which it is thought worth while to install plant for the control of the amount of moisture present. A few years ago the bare suggestion would have been received with incredulity. Two attitudes would have been adopted towards it: it would have been held, firstly, that the control of such factors under such conditions was not feasible, and that it would be wiser and more practical to concentrate attention on other problems; while alternatively it would have been argued that, even if the matter were seriously examined, no possibility of handling it successfully could be devised. It says much for the change that has come over the face of industry that such problems are now not only faced boldly, but that the industrial scientist feels confident that means exist, or can be developed, for their satisfactory solution.

In spite of the great advances which have been made in all directions, it is likely that many problems exist which could be tackled more or less successfully by means now at our disposal. The probability is that in many industries there are difficulties which have so long been considered insuperable that they are no longer regarded merely as difficulties to be overcome, but as inherent obstacles which must be borne with resignation. Their re-examination, and consequent solution, would probably lead to remarkable effects. In fact, it seems quite certain that we are a very long way from the end of romantic surprises in the application of new methods. In the next few years, it is likely that not only will the position gained in many industries be consolidated, but that the most important results will probably be due to a widening of outlook.

The Lead Paint Regulations

SIR WILLIAM WARRENDER MACKENZIE, who was appointed by the Home Secretary to hold an inquiry into the draft regulations for preventing danger from lead paint in connection with the painting of buildings, has now issued his report. The inquiry did not close until the end of July, so that the report has been prepared with exemplary promptitude. In spite of the rapidity of its preparation, the report is a model document, giving an excellent account of the history of the subject, the regulations, and the objections raised; and finally, after a consideration of the evidence, amended regulations are indicated.

It will be remembered that the Lead Paint (Protection Against Poisoning) Act, 1926, aims, among other things, at regulation and not at general prohibition, and for this purpose empowers the Secretary of State to "make regulations preventing danger from lead paint to persons employed in or in connection with the painting of buildings." The regulations which formed the subject of the inquiry fell into two main groups: Those for suppressing lead dust and those for preventing or minimising the absorption of lead into the system by enforcing cleanliness and care. They were in substance the regulations which were agreed on, in 1922, at a conference of the Painters' and Decorators' Joint Industrial Council with the Home Office. The objections to the proposed regulations consisted of three main classes: (1) Those which alleged inappropriateness of some of the regulations to a section of work on iron and steel structures; (2) those which alleged the inappropriateness of some of the regulations to a section of workmen who were not ordinarily but occasionally employed in painting work; and (3) objections in the nature of drafting amendments for the purpose of carrying out more effectively the intention of the Act of 1926.

The main findings of the report are, firstly, that the claim for total exclusion from the operation of the regulations in the shipbuilding industry has not been established, but that where persons are casually, occasionally, or intermittently employed, a modification of the regulations may be made; the powers of the Secretary of State, it is pointed out, enable him to make regulations reasonably necessary to meet the circumstances of each case. Secondly, with regard to the regulation allowing five minutes for washing before meal times and leaving work, it is thought best to allow the matter to be dealt with by mutual agreement and not by statutory regulation. Finally, a difficulty in connection with the term "fixtures" is dealt with. In an appendix to the report the amended regulations are given. Apart from these general questions, it may be observed that the inquiry led to an interesting investigation. Further information of the precise nature of the dust (if any) inhaled by the operative resulting from chipping and rubbing down of painted iron and steel surfaces being found necessary, Messrs. L. C. McNair and C. W. Price, of the Factory Department of the Home Office, undertook to carry out this work, the results of which are embodied in the report.

The question of lead poisoning has been a bugbear for so long that everybody must feel gratified at the efforts which are being made to cope with it. At the same time, action is taken with the greatest possible caution. The Lead Paint Act, as indicated above, aims at regulation and not at general prohibition; though it should be remembered that, as is pointed out in the report, the Home Secretary plainly intimated in the House of Commons that the method by regulation was experimental, and that if regulation should fail, prohibition would be enforced.

A Better Trade Atmosphere

As has been shown by trade returns published recently, the general trade atmosphere of the country is sensibly improving. In spite of the heavy effects of last year's dislocation, industrial concerns are holding their own, and in many cases one hears distinctly favourable accounts of trade. Equally satisfactory are the signs that the labour situation is becoming stabilised, and that responsible labour leaders are now openly setting their faces strongly against organised disruption of industry. If they had taken a rather bolder attitude at an earlier stage, probably much of the trouble might have been avoided. It has been made clear now that the noisy agitators not only represent an insignificant minority feeding on chronic discontent, but are destitute of any constructive ideas. This section is not only largely responsible for many recent troubles, but it is clear that it is as eager to break up sane organisations of working men on sane trade union lines as it is to destroy anything else that happens to be in existence. Slowly, this attitude is becoming discredited, and workers are realising that they have everything to lose by the destruction of the national industries by which they live and everything to gain from a return to the healthy doctrine of work.

If anyone doubts the truth of this doctrine he will find convincing evidence in the testimony of what is happening on the Continent. Everyone who visits countries like Germany and Belgium is impressed by the recoveries in progress and by the industry of the whole population. Mr. Edward J. Mehren, vice-president of the McGraw-Hill Publishing Co., who records his impressions of a recent tour of Europe in *Chemical and Metallurgical Engineering*, sums up the position with admirable clearness and brevity. "For hard work," he writes, "there is no substitute; and that lesson the Germans have learned." Equally emphatic is Dr. Duisberg, the great German industrialist, on the same point: "Work is the deep secret of Germany's potential strength in industry"; and looking to America he makes the same observation: "America can undoubtedly keep the economic leadership of the world for twenty or thirty years if her young people are taught to work." Such qualities as these in other nations can only be met by similar qualities in our own country. The qualities are inherently present to-day as much as ever; all that is necessary is that they should be quickened into life again and allowed free scope for activity. One of the most promising signs of to-day is the tendency of the workers themselves to put down senseless obstruction among themselves, and to turn the workshops of the country into houses of contented and constructive industry.

Books Received

THE YEAR'S PHOTOGRAPHY. London: The Royal Photographic Society. Pp. 86. 1s. 6d.

THE CHEMICAL ELEMENTS AND THEIR COMPOUNDS. By J. A. V. Butler, D.Sc. London: Macmillan and Co. Pp. 205. 6s.

The Calendar

Oct. 3	Society of Chemical Industry (London Section): "The Gas Industry—Past, Present and Future." W. J. A. Butterfield. 8 p.m.	Royal Society of Arts, John St., Adelphi, London.
3–7	Shoe and Leather Fair.	Royal Agricultural Hall, London, N.
5	Society of Public Analysts. 8 p.m.	Burlington House, Piccadilly, London.
7	West Cumberland Society of Chemists and Engineers: "Refractories." A. J. Dale. 7 p.m.	Technical College, Workington.
10	Sir John Cass Technical Institute: Inaugural Ceremony; Address by Sir William H. Beveridge. 8.15 p.m.	Jewry Street, Aldgate, London.
11	Institution of Petroleum Technologists, 5.30 p.m.	Royal Society of Arts, John Street, Adelphi, London.
12	Oil and Colour Chemists' Association: "Colour Standardisation and Testing in the Paint and Colour Industry." 8 p.m.	Royal Society of Arts, John Street, Adelphi, London.
12–22	Exhibition of Inventions.	Central Hall, Westminster, London.
13	Institute of Metals, London Section: Address by Mr. A. H. Mundey, "Works Economics." 7.30 p.m.	Society of Motor Manufacturers and Traders, Ltd., 83, Pall Mall, London.
14	Institute of Metals, Sheffield Section: Mr. J. H. G. Monypenny, "Science and Industry." 7.30 p.m.	Applied Science Department, University of Sheffield.
14	Chemical Engineering Group: "A Recent Development of Spray Drying." J. Arthur Reavell. 8 p.m.	Burlington House, Piccadilly, London.
16–27	Société de Chimie Industrielle: Seventh Congress of Industrial Chemistry.	Paris.

New and Rapid Methods of Organic Analysis

By Dr. W. W. Myddleton

(Lecturer in Chemistry, Birkbeck College, University of Lo[illegible])

Dr. Myddleton has just returned from a visit to the laboratories of Professor ter Meulen, at the Technische Hoogeschool, Delft, Holland, where new methods of organic analysis have been worked out.

In recent years many improvements have been described in the methods of determining the percentage composition of organic compounds. Advances of the greatest general importance are to be found in the methods described by Professor H. ter Meulen and Dr. Heslinga of the Technische Hoogeschool, Delft.* The attractive features of these methods are rapidity, simplicity, and reliability. In each case

FIG. 1.—DETERMINING CARBON AND HYDROGEN.

the substance is destructively oxidised or reduced in such a way that no excessive heat is thrown out into the laboratory and the operation can be carried out on any available bench.

Saving in Time

The factors which reduce the time required for the determinations are the small amounts of material employed (50 milligrams being the average weight of substance), the use of suitable catalysts or oxidising agents, and the replacement of hard glass combustion tubes by silica. The experienced analyst would therefore probably ask three questions at this stage. Is a micro-balance required? Are the catalysts easily prepared in an active form? Can hard glass be used instead of the relatively costly silica tubing? The weighings are made on any ordinary good balance, so that the difficulties encountered in the use of a micro-balance are avoided. The catalysts and oxidising agents are easily and rapidly prepared and renewed. While silica tubes are advised, hard glass may be employed in the determination of carbon, hydrogen, nitrogen, sulphur, oxygen, and halogens at the expense of a little extra time and probably at a higher cost of upkeep.

All these features make the methods of extreme value to research workers, especially to those engaged in research in the evening courses of technical colleges. Here time prohibits the adequate use of the combustion furnace by the evening student, but any one of the new methods can be employed well within the usual two- or three-hour session.

Industrial Importance

Industrial research workers and routine analysts alike will find the methods of special interest for the foregoing and other reasons. Experience has shown, for example, that in the determination of nitrogen in coal, feeding cakes, and many other commercial products, the combustion method and the Kjeldahl method both give values much below the real nitrogen content. The workers of the Technische Hoogeschool have described an efficient and rapid method of dealing with these substances. The determination of arsenic in organic materials is ordinarily a most tedious process, but by the method of destructive reduction the time is brought within the limit of an hour or two, according to the nature of the material. Traces of arsenic are determined by comparison of an arsenic mirror with standards, while larger amounts are weighed. A colorimetric method for the determination of sulphur enables one to determine traces of the element in oils within one hour.

One of the greatest difficulties in the way of the general adoption of the new methods is, of course, that in many industries standard methods of analysis are prescribed either by arrangement amongst manufacturers or by legal enactment, particularly in the case of arsenic and nitrogen. The popularity of the new methods will undoubtedly in course of time lead to a change in standards, but in the meantime it is a considerable advantage in many cases to carry out an analysis rapidly during manufacturing operations.

As regards the determination of carbon and hydrogen, apparatus for which is shown in Fig. 1, the two caustic potash bubblers on the left are connected in parallel, one to deliver air and the other oxygen. After further purification, the gas enters the clear silica combustion tube. The organic substance is weighed into a small platinum boat and placed in the tube in front of a small asbestos oven 12 cms. long, heated by one Bunsen burner to 400–450° C. In this high temperature zone the tube is packed with 6–8 cms. of granular manganese dioxide, held in position between plugs of very fine silver wire. The substance for analysis is slowly volatilised by a second burner and passed over the oxide. Moisture is collected in the first calcium chloride tube on the right. Carbon dioxide is absorbed in the second tube, containing soda-lime. This account embodies several modifications of previously published details. The time of combustion is 20 minutes.

The determination of nitrogen in coal, feeding stuffs, etc., is shown in Figure 2. Pure hydrogen is delivered from a

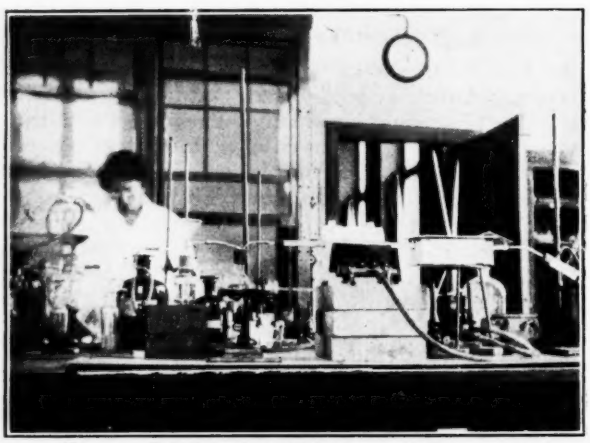

FIG. 2.—DETERMINING NITROGEN IN COAL, ETC.

Kipp's apparatus through the three bubblers on the left. The gas passes through a safety trap and then takes water vapour from a flask containing almost boiling water. The moist gas comes into contact with the weighed sample (which has been mixed with sodium carbonate in a special copper container), heated in an opaque silica tube. The heating is effected by means of a five-burner Fletcher furnace. The next part of the silica tube contains a mixture of asbestos fibre and nickel, heated in an asbestos oven to 250° C. by one burner. The gases are passed through a small condenser and ammonia is absorbed in standard acid and determined by titration. The time of combustion is 30–40 minutes.

* *Rec. trav. chim. Pays-Bas, pp.* 112, 509 (1922); 1093 (1923); 181, 551, 643, 899 (1924); 271 (1925); 365, 368 (1926); *Chem. Weekbl.*, XX, 98 (1925).

The Making of a Chemical

The Middle Stage of Development of a Process

Under the title "The Making of a Chemical," Messrs. E. I. Lewis, M.A., B.Sc., and G. King, M.Sc., F.I.C., have written a book (Ernest Benn, Ltd., pp. 288, 10s. 6d.) the primary object of which is "to give those who have a mind to enter our industry an insight into works' practice and works' conditions." Below are some notes from the account given in the book of the four stages in the development of a process.

A CHEMICAL process, state the authors of *The Making of a Chemical*, from its inception to its completion passes through four more or less well-marked stages. They are:—

Stage I. The laboratory work.
Stage II. The middle stage.
Stage III. The step between.
Stage IV. The running plant.

Stages I. and II., which are closely related and overlap, may be named "The Investigation."

The Middle Stage

In this middle stage we get right away from the practice of academical laboratories. Nor must it be supposed that the conditions met with now are in any way reproduced in the small-scale working models—copies of genuine industrial plants—which are to be found attached to certain academical laboratories. These midget plants have their value in teaching, but they represent the running plant in which the problems of Stage II. have, for the greater part, been solved. It is during this middle stage that the industrial chemist comes to grips with two unwinking, unrelenting dragons—rearing costs and intransigent materials.

Where there is more than one general method of attacking a problem, that one which is most in keeping with the general run of experience of the firm will be preferred, but not necessarily adhered to; it will probably have been chosen before the beginning of, or quite early in, Stage I. Thus where a substance is formed by oxidation this works may lean towards an electro-chemical, that towards a purely chemical, method; another will endeavour to develop a catalytic process. It is not always certain that the intrinsically proper process would prove actually cheaper to a particular firm; proximity to the sea-board, to raw products, to other chemical works, to sources of fuel or water power, and a host of other matters, may turn the beam this way and that. But the final decision will be dictated by considerations of cost of the manufactured product.

The Gap Between Laboratory and Factory

Chemical plant is expensive to erect and expensive to alter, hence, even did the results obtained in the laboratory reveal solid ground for designing the large scale plant, it would, with the exceptions indicated in the first paragraph of this chapter, be hazardous to proceed directly. In many instances the laboratory leaves and provides much to clear up, and it is an unusual experience when quite new problems do not crop up. It need not surprise us, therefore, to learn that many a likely process reared and cherished in the laboratories comes to an untimely end in the middle stage. Yet it is not to be concluded, because the investigation itself is abandoned, that nothing of worth has come out of it; nearly always it has shed light upon other and perhaps independent researches.

As we have more than hinted above, many experiments here are staged for obtaining information for the general or detailed design of the final plant. In this quest the experimental plant itself may be changed in design almost daily. At times it may have to be dismantled and rebuilt, even duplicated, either for following up a new line of search or for giving better effect to an old one. Hence, if money and its equivalent time are not to be frittered away, the chemist must be apt with what lies at his hands in building his experimental plant.

The mere increase in scale of the operations is a far-reaching change in conditions which may, and often does, seriously affect the speed and course of a reaction. Hence the results of Stage I., however well established there, are re-examined. This re-examination may, and usually will, bring to light difficulties not encountered during Stage I.—however carefully planned, Stage I. work will fall short of perfect efficiency. The causes should be traced, for it is long odds that if only symptoms are treated the troubles will reappear in the running process. On the other hand, some bogies of Stage I. may not emerge during Stage II. It is well not to be jubilant therefor; they are probably dormant, and may yet wake up to scare the works manager. These gentlemen are of a sceptical race; you will not easily ignite their enthusiasm at your own torch. In the Rev. Mr. Collins's words, more or less, they are the sort of person whom one cannot regard with too much deference. They will tell you that even after twelve months' unbroken and fear-allaying success a new process may begin to discover irregularities.

In devising the lesser details—for weighing and measuring, for the determination of end-points—and, indeed, wherever manipulative skill is required, the chemist must have his eye, not upon the exceptionally good workman, but upon the one who was taken on with some misgiving. Let the scheme be, as far as possible, fool-proof.

A whole class of observations and measurements, impossible on the small laboratory scale of work, must now be made. Thus where gases are being absorbed or washed one must discover what velocities of, what period of contact of, what paths taken by, the gases and their absorbents give the most chemically efficient and financially economical results. During this stage many details of methods are decided upon which could not have been studied earlier. The grinding of raw materials of intermediate and of final products may entail considerable trouble. The physical and chemical nature of a substance, and the fineness to which it is to be brought, will control the choice of mill; trials upon more than one type may be necessary.

Various Problems

In the process the source of heat energy must be considered from more than one point of view; the choice may also determine the nature of the impurities in the product; conversely, the purity to be attained may decide the source of energy. When two liquids, or a solid and a liquid, or even two powders, between which a reaction occurs are to be mixed, it may make very little difference on the small scale how they are brought together, whereas it may make all the difference on the larger scale which is added to which; at what rate; whether they shall meet at or under the surface; with or without mechanical aids; with or without precautions for controlling temperature, and so on. Problems in separation are perhaps less distinctive of Stage II. than are those of the sort we have been speaking of above. They are as likely to be encountered in the laboratory stage.

By-products and their fate may be shortly considered here. It is the dream of the research chemist to dispose profitably of his by-products; it is more likely to be a nightmare to the works manager how to be rid of them. County and borough councils and river commissioners have a deep-rooted and aggressive antipathy to certain kinds of free gift, and thus it falls to this distracted man to provide for their disposal. The packing-houses of Chicago have claimed that they can use up all of the porker but its squeak; the usefulness of the unvocal cocoanut is even more complete. In industrial chemistry some few processes are unburdened by waste products. More than one moribund process has been revived by an increase in value of its by-product; waste product has become chief product. Perhaps the most famous instance is that of soda-ash manufacture. It will be remembered that even as the enforced shortage of nitrogen compounds in Germany hastened Haber's ammonia process during the Great War, so was the Leblanc process established by the denial of alkalis to Revolutionary France by her enemies. The escaping hydrochloric acid and the calcium sulphide were troublesome by-products and sources of loss. But eventually the Chance-Claus sulphur recovery process and the bleaching powder manufacture became so remunerative that they assisted the black ash process for many years (from 1872) to exist, precariously, beside the soda-ammonia process, its soda-ash actually becoming the secondary product. The names of anthracene, naphthalene, etc., and of pitchblende will recall to the reader other instances of once worthless waste products coming into their own.

B

Conveyance of Carbon Bisulphide

Issue of Amended Regulations

THE Home Secretary has issued, under date September 9, amended regulations governing the conveyance of carbon bisulphide in tank wagons, being Statutory Rules and Orders, 1927, No. 865, as follows :—

" In pursuance of Section 9 and the Third Schedule of the Petroleum Act, 1926, as applied by Order in Council dated November 5, 1926, I hereby make the following regulations amending the Bisulphide of Carbon (Conveyance) Regulations, 1927.

" 1. Bisulphide of carbon may be conveyed in tank wagons, subject to the provisions of these regulations.

" 2. The Bisulphide of Carbon (Conveyance) Regulations, 1927, shall apply with the exception of Regulations 1, 2, 3, 4, 5, 12, and 14.

" 3. A tank wagon used for the conveyance of bisulphide of carbon shall be constructed in accordance with the provisions contained in the Schedule to these regulations and together with its connections and fittings shall be maintained in good condition.

" 4. The capacity of a tank wagon shall not exceed 1,000 gallons. The foregoing limitation on the capacity of a tank wagon shall be construed so as to permit of the tank containing the amount specified under varying conditions of temperature. Trailers shall not be employed with tank wagons.

" 5. During the filling or emptying of a tank wagon the following precautions shall be observed :—

(I) If the wagon is mechanically driven the engine shall be stopped the whole time the filling or emptying is proceeding and shall not be run until all tanks have been securely closed.

(II) If the wagon is horse drawn, the horses shall be removed and the wheels securely scotched before the filling or emptying is begun.

(III) Adequate provision shall be made to prevent the accumulation of a dangerous static charge of electricity.

" 6. Bisulphide of carbon in cans or other packages shall not be conveyed on any tank wagon used for the conveyance of bisulphide of carbon.

" 7. If electric lighting is employed on any tank wagon conveying bisulphide of carbon, the following conditions shall be complied with :—

(I) The pressure shall not exceed fourteen volts.

(II) The circuit shall be heavily insulated from the chassis and the wiring shall be so fixed and protected as to reduce as far as possible risk of damage.

(III) The generator, battery, switches, and fuses shall be carried in front of the fire-resisting screen when fitted and the battery shall be in an easily accessible position.

(IV) Means of cutting off the current close to the battery by a double pole switch or other suitable method shall be provided.

" 8. The tank of any tank wagon conveying bisulphide of carbon shall be legibly marked with the words ' Bisulphide of Carbon, Highly Inflammable.'

" 9. These Regulations may be referred to as the Bisulphide of Carbon (Conveyance in Tank Wagons) Regulations, 1927."

SCHEDULE.

(A) MECHANICALLY DRIVEN ROAD TANK WAGONS.

1. The vehicle, including the tank and fittings, shall be strongly constructed of fire-resisting materials and shall be maintained in thoroughly good condition. The engine and fuel tank shall be effectively screened from the tank by a fire-resisting shield carried up above the top of the tank and down to within twelve inches of the ground, and the exhaust shall be wholly in front of this shield. The tank shall be securely fastened to the frame of the vehicle. A space of not less than six inches, which shall be left clear and unobstructed except for any part of the framework of the wagon, shall intervene between the tank and the fire-resisting shield.

(B) HORSE-DRAWN ROAD TANK WAGONS.

2. The vehicle, including the tank and fittings, shall be strongly constructed and the tank shall be securely fastened to the body of the vehicle.

GENERAL PROVISIONS.

3. The tank, if of more than 500 gallons capacity, shall be divided into self-contained compartments, no one of which shall contain more than five hundred gallons.

4. Discharge valves shall be fitted only at the top of the tank and discharge shall be by the pressure of an inert gas or of water. The valve for the attachment of the pressure pipe shall be fitted with a cover, which shall be kept closed and locked except during the operation of emptying the tank, and the keys shall be retained by a responsible person.

5. The filling and discharge pipes shall be carried down nearly to the bottom of the tank and shall each terminate in such a way as to provide at all times a liquid seal at the bottom of the pipe.

6. The dipping pipes shall be carried down to the bottom of the tank, and any openings in them other than the upper orifice shall be covered with fine wire gauze of not less than 28 meshes to the linear inch.

7. The ventilating openings shall be covered with fine wire gauze of not less than 28 meshes to the linear inch, protected by covers when not in use.

Death of Professor Liversidge

WE regret to announce that Professor Archibald Liversidge, F.R.S., the distinguished chemist, died at his residence at Coombe Warren, Kingston Hill, on Monday, in his 80th year. Born at Turnham Green on November 17, 1847, he entered the Royal College of Chemistry and Royal School of Mines in 1866, Professor Frankland being his teacher at the former. In 1870 Professor Liversidge was elected to an open scholarship in science at Christ's College, Cambridge, and during his first year there he held the post of demonstrator in chemistry at the University Laboratory for two terms. In 1872, before he was 25, he accepted the chair of chemistry and mineralogy in the University of Sydney, New South Wales. He went out in September, 1872, and from that time till his retirement with the title of Emeritus Professor in December, 1907, his services to science in Australia were of much value. Chief among them was the foundation of the Australasian Association for the Advancement of Science in 1885. He also founded the Sydney section of the Society of Chemical Industry in 1902, and was its first chairman. Professor Liversidge made a chemical investigation of the Sydney water supply for the Government in 1876. In 1888 he published a survey of the minerals of New South Wales, and he was the author of over 100 papers and researches published by the Royal Society, the Chemical Society, and the Royal Society of New South Wales. Professor Liversidge was elected a Fellow of the Royal Society as far back as 1882, and he was an hon. fellow of the Royal Society of Edinburgh, vice-president of the Chemical Society, 1910-13, and of the Society of Chemical Industry, 1909-12. He was also a member of many other scientific bodies.

Faraday Society Meeting

A MEETING of the Faraday Society was held in the rooms of the Chemical Society, Burlington House, London, on Wednesday. In a paper on " The Electronic Theory of Valency. Part VI. The Molecular Structure of Strong and Weak Electrolytes. (C) Reversible Ionisation," Professor T. M Lowry pointed out that although most electrolytes are ionised completely, even in the solid state, there are many compounds in which ionisation is incomplete and reversible. Dr. E. B. R. Prideaux read a communication dealing with " The Effect of Temperature on Diffusion Potentials," in which he arrived at the conclusion that the diffusion potentials between different concentrations of the same strong electrolytes have as a class very low temperature co-efficients. A description of a new apparatus for potentiometric titration, and of a new method of differential titration, formed part of the paper on " The Ionisation of Polyhydrion Acids," by C. Morton.

The Fleet Street Tours

THE last of the twelve tours arranged by THE CHEMICAL AGE for its readers took place on Tuesday, the number of visitors being nearly 100. Led by Mr. Allen S. Walker, the party first visited Staple Inn, in Holborn, and a house mentioned by Dickens in *Edwin Drood*. It then passed on to Ely Place, where the London palace of the Bishops of Ely once stood, the only remaining part being the old chapel, where Henry VIII met Cranmer, and which is now the Roman Catholic Church of St. Etheldreda. Finally, a visit was made to St. Sepulchre's Church, Snow Hill.

Salford Analyst's Report

Work of Year 1926

THE city analyst for Salford, Mr. H. H. Bagnall, B.Sc., F.I.C., has just issued his annual report for the year 1926. During the year, 3,208 samples, he states, were submitted to him for analysis. Of these, 1,387 were taken in connection with the Sale of Food and Drugs Acts, while 1,821 were submitted by various Corporation departments. Of the 1,387 samples taken under the Sale of Food and Drugs Acts, 62, or 4·5 per cent., were returned as adulterated. These 1,387 samples represent 563 per 100,000 of the population, which is a greater number than is taken by most authorities. In a discussion of milk, it is stated that 994 samples were examined, of which 2·5 per cent. were returned as adulterated; this figure is the best obtained since 1917. An analysis of the results leads to the view that "the chemical composition of the milk sold in Salford is satisfactory, and that it compares quite favourably with that sold in other districts."

Butter, Margarine and Cheese

Forty-nine samples of butter were examined during the year, all being found to be genuine. The percentage of water varied from 7·0 per cent. to 14·3 per cent., and the Reichert—Wollny number of the fat from 24·0 to 31·2. All the samples were examined for boron preservative and this was detected in only one case, the amount being 0·35 per cent. Butter must be made entirely from the milk of the cow, and must not contain more than 16 per cent. of water. According to the new regulations governing the use of preservatives in food, which came into force on January 1, 1927, no preservative will be allowed in butter after January 1, 1928. Twenty samples of margarine were examined, none being adulterated. Five samples of Cheshire cheese were also genuine, and contained from 34 per cent. to 42 per cent. of fat. It is interesting to note that the Cheshire Farmers' Union has lately adopted a standard of 45 per cent., calculated on the dry cheese, for genuine Cheshire cheese. The Cheshire Cheese Federation is establishing a registration scheme and a trade mark, aiming at giving confidence to consumers that cheese bearing the trade mark will be genuine Cheshire cheese, with the assurance of cleanliness in the manufacturing conditions.

In regard to various edible preparations which, in the view of the analyst, did not conform to claims made in advertisements, manufacturers were approached with a view to the deletion of offending matter from the advertisements, and this action succeeded in its object.

In addition to formal analytical work, such as that described above, tests were carried out on other subjects, such as the strength of sunlight. The coal strike showed its effect in a great increase in the amount of sunlight received.

Big Margarine Fusion

Jurgens and Van den Berghs

IT is announced that an important international syndicate has been formed which has acquired the controlling interest in both the Jurgens and Van den Bergh undertakings in all countries. It is the intention to maintain the full individuality of each of the two concerns, but they will act in close co-operation. Jurgens, Ltd., is the English subsidiary of the great Dutch company, Anton Jurgens United Margarine Works, which was established over 20 years ago, and whose head office is situated at Oss, Holland. The authorised capital of the English company is £10,000,000, of which £5,000,000 is issued, one half in ordinary shares, the whole of which is held by the controlling company, the other half in participating preference shares, which carry a cumulative dividend of 7 per cent. guaranteed by Anton Jurgens. The company owns a factory at Purfleet, and is a large shareholder in the Olympia Oil and Cake Co. The parent Dutch company, whose shares were introduced on the London market a few years ago, has an issued capital of 121,621,800 fl. (£10,135,150). The company holds shares in a number of companies engaged in the manufacture of margarine or of materials for margarine. It does a large business with Germany and other countries. Van den Berghs, formed as long ago as 1895, are manufacturers and dealers in margarine, refined oils, butter, soap, etc. The concern has an issued capital of £3,575,000. It has numerous interests.

"C.A." Queries

We receive so many inquiries from readers as to technical, industrial, and other points, that we have decided to make a selection for publication. In cases where the answers are of general interest, they will be published; in others, the answers will simply be passed on to the inquirers. Readers are invited to supply information on the subjects of the queries :—

77 (*Calcined Kieselguhr or Diatomaceous Earth*).—Can you recommend a concern supplying calcined kieselguhr or diatomaceous earth, or having the facility and experience for calcining this material?

78 ("*Amico*" *or* "*Amicol*").—Information is required regarding an acid or preparation which is used for converting cut lalang or grass into a green pulp manure. Our inquirers do not know the name of the acid, but it is something like "Amico" or "Amicol" and, they understand, is supplied in jars of about 20 gallons.

79 (*Collapsible Tubes*).—"We would esteem it a favour if you could provide us with the address of a firm who supply collapsible tubes for artists' colours."

80 (*Yeast and Potassium Carbonate*).—A firm in Selangor, F.M.S., is anxious to obtain samples of yeast and potassium carbonate, and quotations for same in one cwt. and one ton lots, delivered Malaya.

Maison de la Chimie

American Chemical Society's Refusal to Participate

IN regard to the proposed erection of a Maison de la Chimie in Paris, in connection with the celebration of the centenary of Marcelin Berthelot, the council of the American Chemical Society has approved a resolution in which it states that "the American Chemical Society is glad to honour the name and accomplishments of Marcelin Berthelot and in evidence thereof has appointed two of its own past presidents to represent it at the Centenary Celebration on October 25, 1927. An international 'Maison de la Chimie,' and 'An International Office of Chemistry,' nationally conceived with predetermined control and location in Paris, is an entirely different matter, to which the American Chemical Society cannot give its adherence, even though it has been connected with so eminent a name as Berthelot to insure its success. The American Chemical Society has naught but good wishes for the 'Chemists' Club' of New York, the long considered 'House of Chemistry' of Great Britain, the 'Hofmann House' of Berlin, or for a national 'Maison de la Chimie' to be located in Paris, and would be glad to see any of its members, who are so inclined, contribute to their support. It cannot, however, admit the propriety of any national group assuming the right to centralisation of control of international chemistry within its own territory and sphere of influence, even if the major costs of construction and upkeep of such an institution were not assessed upon the rest of the world.

Centralisation of Control

"The American Chemical Society believes that if an International Office of Chemistry, having as its object the centralisation of influence of chemical science, both pure and applied, is ever deemed desirable or necessary, it should be inspired through co-operative action of the world's scientific chemical organisations and not by governments through political channels. The American Chemical Society does not approve any world centralisation of control of chemistry, and believes that the future progress of chemistry can best be served as heretofore by harmonious co-operation of national organisations. The Society specifically disclaims any discourtesy to the organisers of the present movement, but believes the underlying principle to be so detrimental to continued international co-operation that it would be lacking in probity if it did not make its judgment known."

Ethyl Petrol in the Schneider Cup Race

IT is stated that Pratt's ethyl petrol (ordinary petrol with the addition of an "anti-knock," presumably lead tetraethyl) was used in the British aeroplane which won the Schneider Cup.

From Week to Week

AN EXHIBITION OF THE SHEFFIELD INDUSTRIES will be held from October 18 to 29.

THE "DAILY DISPATCH" ARTIFICIAL SILK EXHIBITION will be held at Manchester from October 4 to 15.

AMALGAMATED ZINC (DE BAVAY'S), LTD., announce that their London office has been transferred to 27, Old Broad Street, E.C.2.

A FUND is to be instituted for the establishment of a Procter Research Fellowship, in memory of the late Professor H. R. Procter.

ACCORDING TO AN OFFICIAL STATEMENT, 91,000 tons of crude oil have been imported into Swansea this year, all of which has been refined and distributed without mishap.

THE EXPLOSIVES TRADES EMPLOYERS' ASSOCIATION will, consequent upon the formation of Imperial Chemical Industries, Ltd., shortly be dissolved, and will be merged in the Chemical and Allied Employers' Federation.

FIVE WORKMEN OF THE WASHINGTON CHEMICAL CO., LTD., Northumberland, whose years of service total 190 years were, on September 23, presented with gold watches and chains in recognition of their long years of service.

SIX MEN WERE INJURED—two fatally—when the lid of a high pressure keir used in the hot-air process blew off at the Bentcliffe works of the Eccles Bleaching Co., Ltd., Manchester, on Tuesday. The cause of the explosion has not been definitely ascertained.

MAISEL'S PETROLEUM TRUST announces that it has agreed to acquire the oil and chemical works formerly owned by Richard Mayer A.-G. at Reval, Esthonia, together with the stores of raw material in the process of manufacture, and the finished goods.

THE BRITISH CELANESE CO. has acquired a new building in Hanover Square, London, W., which will be ready for occupation early next year with an area of approximately 100,000 sq. ft. The head office, the warehouse, and the accountant's staff will be centred in the building.

THERE WAS A DECREASE IN EMPLOYMENT in United States chemical works in July as compared with June, according to official statistics just published. Reports received from 130 works show a decrease of employed workers from 31,888 to 31,510, equal to 1·2 per cent. The decrease in wages was 5·1 per cent.

FOR LEAVING THE REMAINS OF A CARBOY on the highway at Sale, Thomas Hackett, a lorry driver, was fined 40 shillings and 21 shillings costs, on Monday. It was stated that when the carboy fell off a lorry the driver looked round and drove away. Some damage was done by acid to the road and to a car following the lorry.

THE FUNERAL OF SIR W. S. GLYN-JONES took place on Monday at Southgate Old Cemetery, the body having been embalmed and brought across from Canada. Among those present at the funeral were Mr. R. R. Bennett (of British Drug Houses), Mr. B. F. Howard, Mr. W. J. U. Woolcock, Sir William Wilcox, and Professor A. G. Greenish.

THE DELEGATES of the Empire Mining Congress spent the week-end inspecting the newly opened copper and gold area in North-Eastern Quebec, and visited the mine and smelter of the Noranda Mines, Ltd., which is reputed to be the richest property in the area. The last technical session was held on Tuesday afternoon in Quebec and the tour concluded with a visit to asbestos mines in the vicinity.

IT IS STATED THAT THE EXISTING AGREEMENT among European magnesite producers will lapse this year and that negotiations for renewal will shortly begin. The Verkaufegemeinschaft der Vereinigten Magnesit Industrien has been in operation three years, each of the member works of the cartel receiving its allotted orders from the central sales office in Vienna, which distributes orders received from selling agents abroad.

REVISION OF THE FLEXIBLE TARIFF will be urged by the United States Tariff Commission in its annual report to Congress for 1927. It is claimed that section 315 is unworkable. It has been found very difficult to get actual costs of production in dollars and cents in foreign countries with which to measure the difference from American costs. Invoice prices of imports are regarded as reasonable evidence of marginal costs and in some instances have already been used where production costs were unobtainable.

BEET SUGAR NEWS.—The new beet sugar factory on the Barlby side of the Ouse, near Selby, which has cost about £450,000, is now nearing completion.—Members of Farmers' Unions of Somerset, Cornwall, Devon, Dorset, and Wilts. have unanimously rejected the terms offered by the Anglo-Dutch Co., in the event of the erection of a factory in the South-West of England.—While it is early to attempt to forecast as to how this year's beet crop will turn out, it is hoped that, in spite of the rain, the yield will, on the average, not be far behind that of last winter.—The work of building a beet sugar factory at Blunham, Bedfordshire, will be begun shortly at a cost, it is stated, of over £500,000.—An option on a site at Netherton estate, near Ross, Herefordshire, has been purchased by Duncan Stewart and Co., of Glasgow, with a view to erecting a beet sugar factory. The firm state that they will employ a process whereby effluents will not be discharged into the river.

THE I.G. ANNOUNCES that a new artificial silk, "Travise," is to be manufactured at the Dierig works.

THE LEAD PAINT REGULATIONS, 1927, have been issued by the Home Secretary, under date September 6.

MR. P. A. HANSEN has been appointed chief of the new Irish Testing Station for Milk and Butter Investigation in Dublin.

A PHOTOGRAPHIC, OPTICAL, AND SCIENTIFIC EXHIBIT, organised in a separate building, will be included in the London section of the 1928 British Industries Fair.

THE ZENITH AGENCY state that as from September 23, their offices have been transferred from 1a, Wood Street, E.C.2, to larger premises at 4, Broadway, Ludgate Hill, London, E.C.4.

THE WEDDING took place last week of Mr. Horace Pochin (son of the managing director of the firm of H. D. Pochin and Co., Ltd., chemical manufacturers and proprietors of China Clay quarries, etc.) and Miss Shiela Macleod.

AN INQUEST WAS HELD ON SATURDAY concerning the death of James Dick Dougall, an analytical chemist of Maryport, who was found shot in his office. The coroner found that Dougall had shot himself while of unsound mind.

THE SIR JOHN CASS TECHNICAL INSTITUTE, of Jewry Street, Aldgate, London, will hold its inaugural ceremony for session 1927–28 on Monday, October 10, at 8.15 p.m., when Sir William Beveridge will give an address.

THE WEDDING TOOK PLACE on September 22, at Liverpool Cathedral, of Mr. Rudolph Muspratt, son of Sir Max Muspratt, and Miss Constance Lloyd Davies, daughter of Mr. Lloyd Davies, of Toronto, a well-known figure in the Canadian chemical industry.

PROFESSOR STEELE, professor of chemistry at the Queensland University, states that recent events on the Roma Oilfields have convinced him that an oil well lies beneath the existing gas pocket. It is expected that a deeper shaft will be sunk and absorption plant will be procured to produce oil from the present gas flow.

THE DECREASING EXPORT DEMANDS FOR WOOD DISTILLATES, owing, it is stated, to the competition of German synthetic methanol, have made necessary the financial reorganisation of the Standard Chemical Co., Ltd., of Canada, which has been compelled to dismantle its plants at Sault Sainte Marie, Thornburg, Cockshire, and Weedon, Ontario.

IMPERIAL CHEMICAL INDUSTRIES have decided to open a shipping office in Liverpool as from to-day (Saturday) under the managership of Mr. A. Grossart. This office will deal with all matters relating to the shipping of Brunner, Mond and Co., Ltd., and all communications should be addressed to Imperial Chemical Industries, Ltd., Shipping Office, Cunard Building, Liverpool.

THE NEW GALLERIES of the Science Museum, South Kensington, London, are nearing completion, and will be formally opened early next year. They have a frontage on Exhibition Road of about 230 ft. The main entrance will be in Exhibition Road, and will lead into a large hall, on the north side of which will be a gallery. Galleries will also run almost the entire length of the front of the building on three floors above.

THE BOARD OF TRADE ANNOUNCE that the complaint which they have received under Section 1, sub-section (5) of the Safeguarding of Industries Act, 1921, that spectacles, eyeglasses, and monocles have been improperly excluded from the lists of articles chargeable with duty under Part I of that Act as amended by Section 10 of the Finance Act, 1926, will be heard by the tribunal constituted under Section 10, sub-section (4) of the Finance Act, 1926, on Tuesday, October 4, at 11 a.m., in the Main Conference Room of the Board of Trade, Great George Street, London, S.W.1.

RECENT WILLS INCLUDE:—Mr. Alexander George Mackenzie Jack, lately deputy-chairman of Hadfields, Ltd., £108,540 (net personalty £106,527).—Mr. J. J. Wooler, a director of the Bleachers' Association, Ltd., £114,503 (net personalty £102,612).—Mr. George Randall, chairman and managing director of the Bootle Tanning Co., Ltd., £99,198.—Mr. John Hedley, of Derby Road, Widnes, for many years manager of the United Alkali Co., £13,007 (net personalty £11,393).—Mr. S. Colquhoun, analytical chemist, Hawkhead Road, Paisley, personal estate in Great Britain, £5,699.

THE WELDING INDUSTRY, in all its phases, will be the subject of a conference which will be held at the University of Minnesota on October 20, 21, 22, according to plans worked out by Professor S. C. Shipley, acting head of the Mechanical Engineering Department of the College of Engineering. This is the first conference of this nature held by the University of Minnesota, but in view of the considerable interest shown by the users of welding equipment in the territory, the holding of such a conference promises to become a yearly event. A large part is to be given to papers read by practical users, as well as round table discussions led by experts in their respective lines.

Obituary

PROFESSOR ARCHIBALD LIVERSIDGE, F.R.S., on Monday, September 26, aged 79. An account of his life and work is given on another page.

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Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

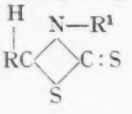
Abstracts of Complete Specifications

276,427. Hydrocarbons Obtained by Cracking Processes, Purification of. W. Carpmael, London. From I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, May 26, 1926.

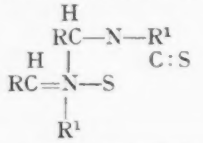
Low boiling hydrocarbons obtained from high boiling oils contain strongly unsaturated constituents which cause an unpleasant odour and colouring of the liquid; these constituents cannot be removed by treating with sulphuric acid or liquid sulphur dioxide, which may dissolve also the light oils. In this invention, the hydrocarbon is purified by heating with ferric chloride containing water, which attacks the most unsaturated constituents with the formation of heavy condensation products. The purified product is colourless and does not resinify. Anhydrous ferric chloride is not suitable for this process.

276,435. Vulcanisation Accelerators, Process for the Manufacture of. E. C. R. Marks, London. From E. I. Du Pont de Nemours and Co., Wilmington, Del., U.S.A. Application date, May 28, 1926.

These accelerators are formed by the interaction of an aldehyde, an amine (other than ammonia), and carbon bisulphide in various molecular proportions. The compounds may be obtained by first treating an aldehyde with an amine and the product with carbon bisulphide, or by treating the amine with carbon bisulphide and condensing the product with an aldehyde. The product from the amine and carbon bisulphide is a mono-substituted dithio-carbamic acid, so that the accelerators can be obtained by treating the substituted ammonium salt of a mono-substituted dithio-carbamic acid with an aldehyde. Similarly a Schiff's base may be treated with carbon bisulphide to obtain these products. The combination of equimolecular proportions of these three constituents yields products having the general formula,



where R represents hydrogen or a hydrocarbon radical, and R^1 an alkyl, aryl, or aralkyl radical. If the proportions are aldehyde 2 molecules, primary amine 2 molecules, and carbon bisulphide 1 molecule, the products obtained have the general formula,



The aldehydes employed include formaldehyde, acetaldehyde, propionaldehyde, butyraldehyde, benzaldehyde, etc., and the primary amines include methylamine, ethylamine, hydroxyethylamine (amino ethanol), *n*- or isopropylamine, *n*- or isobutylamine, aniline, *o*-toluidine, *p*-toluidine, etc. A number of examples are given.

276,450. Dyeing Artificial Silk, Process for. British Dyestuffs Corporation, Ltd., 70, Spring Gardens, Manchester, J. Baddiley, P. Chorley, and C. Butler, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, June 4, 1926.

Regenerated cellulose silks such as viscose silks are dyed with the secondary disazo dyestuffs obtained by combining diazotised amino-salicylic acids or their homologues with the usual middle components, further diazotising and combining with 1:8-dioxy-naphthalene-sulphonic acids of 1:8-amino-naphthol sulphonic acids or *N*-substituted derivatives of the latter. These dyestuffs have previously been known for dyeing chrome mordanted wool and for chrome printing. The acid employed may be 5-amino-salicylic acid or its 1:2:3-isomer, or a mixture of the two, or their homologues. The middle components may be α-naphthylamine, 1-amino-2-naphthol ethers, 1-naphthylamine-6- or 7-sulphonic acids, 1:amino-2-alkyloxy-naphthalene-6- or 7-sulphonic acids, meta-aminoparacresol-methylether, amino-hydroquinone-dimethylether, etc. Even shades of blue, green, and black are obtained, and a number of examples are given.

276,518. Artificial Resins, Production of. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, October 4, 1926.

Specifications Nos. 146,498 and 170,351 (see The Chemical Age, Vol. III, p. 354, and Vol. V, p. 677) describe the production of artificial resins by treating a monocyclic hydroaromatic ketone with alkaline, neutral, or acid condensing agents. In this invention, similar artificial resins are obtained by condensation of mixtures of cyclic ketones or mixtures of these with aromatic or hydroaromatic hydroxyl compounds such as cyclic alcohols or phenols. Thus, mixtures of cyclo-hexanone with meta or paramethyl cyclo-hexanone or mixtures of several methyl-cyclo-hexanones obtained by the hydrogenation of purified industrial cresylic acid, subsequent dehydrogenation and fractional distillation, may be used. The crude dehydrogenation product obtained by passing methyl-cyclo-hexanol vapour over copper may also be used. The artificial resins obtained are very stable against light, alkalies, and acids, and are suitable for the manufacture of lacquers. The resins may be mixed with other natural or artificial resins, cellulose esters or ethers, or natural or artificial caoutchouc. The resins are soluble in linseed oil. Examples are given.

276,522. Low Temperature Distillation of Carbonaceous Material. Synthetic Ammonia and Nitrates, Ltd., R. E. Slade, and C. F. R. Harrison, Billingham, Stockton-on-Tees, Durham. Application date, October 13, 1926.

In the low temperature distillation of carbonaceous material with steam, it has been necessary to use a large excess of steam and then to condense this steam. In this invention, the steam is employed at such temperature that very little permanent gas is liberated, and the vaporised organic compounds are then separated without condensing the steam, which may then be used again. In an example, pulverised coal is preheated in a conveyor to 100°–200° C. by external heating, or internally by flue gases. The coal is fed into one end in a horizontal rotary retort, and superheated steam is passed through in counter-current. The steam falls in temperature from 450° C. at the inlet to 300° C. at the outlet, and only 1–2 per cent. of permanent gas is evolved. The gases are reduced to 150° C. by injecting water, and then scrubbed with oil at 140°–150° C. The oil is then distilled to recover the organic compound, and the residual steam is superheated and used again. The permanent gases are continuously removed from the steam.

276,532. Cracking of Mineral Oils and Other Hydrocarbons. J. F. P. de la Riboisiere, 7, East 54th Street, New York. Application date, November 12 and December 31, 1926.

Mineral oil is heated to a cracking temperature and the vapour is passed through packing material which is maintained at a constant temperature by introducing a liquid having a definite boiling point under such conditions that immediate heat interchange takes place. The substance employed may be water, and the pressure may be 5–10 kilograms per square centimetre. If coal or lignite is treated, it is associated with a liquid hydrocarbon such as crude oil, fuel oil, pitch, or tar. The zone of constant temperature may be a column or tower above the vessel in which the material is cracked, and it may be packed with material such as Raschig rings, or with a mass of highly porous material. The temperature in this zone may be 150°–170° C. while the temperature of cracking in the case of mineral oil is 410°–460° C. The substances condensed in the constant

temperature zone are returned to the material undergoing treatment, and the uncondensed vapours are drawn off for rectification.

276,571. Aromatic Tetrahydronaphthylamines or Derivatives thereof, Manufacture of. O. Y. Imray, London. From Soc. of Chemical Industry in Basle, Switzerland. Application date, February 24, 1927.

These derivatives are obtained by submitting *N*-substitution products of a naphthylamine to catalytic hydrogenation. If the derivative is an *N*-acyl-naphthylamine, the corresponding tetrahydronaphthylamine is obtained by saponifying the hydrogenation product. The individual products are directly obtained, and the process is an improvement on that in which the tetrahydronaphthalene is nitrated and then reduced, and the isomerides separated. Examples are given of the treatment of *N*-ethyl-α-or β-naphthylamine, acetyl-α-or β-naphthylamine, acetylated *N*-ethyl-α-naphthylamine, and *N*-phenyl-α-naphthylamine.

Note.—Abstracts of the following specifications which are now accepted, appeared in The Chemical Age when they became open to inspection under the International Convention :—256,272 (I.G. Farbenindustrie Akt.-Ges.), relating to azo dyestuffs, see Vol. XV, p. 356 ; 259,930 (Silesia Verein Chemische Fabriken), relating to oxidising organic compounds, see Vol. XV, p. 620 ; 262,097 (M. Battegay), relating to a nitration process, see Vol. XVI, p. 144 ; 263,082 (J. F. D. Florentin, A. Kling, and C. Matignon), relating to obtaining light hydrocarbons from hydroxylated, carboxylated, and like oxygenated organic compounds, see Vol. XVI, p. 190 ; 269,155 (I.G. Farbenindustrie Akt.-Ges.), relating to substituted aromatic sulphonic acids, see Vol. XVI, p. 559 ; 269,174 (R. Jacobsson), relating to dissolving aluminiferous materials, see Vol. XVI, p. 579 ; 270,729 (Chemische Fabrik auf Actien, vorm. E. Schering), relating to derivatives of amino-metal-mercapto-sulphonic acids, see Vol. XVII, p. 86.

International Specifications not yet Accepted

274,513. Distilling Tar. Soc. des Etablissements Barbet, 5, Rue de l'Echelle, Paris. International Convention date, July 17, 1926.

Gas or coke oven tar is heated under 10 kgs. pressure to 150°–170° C., and the pressure is then released so that the tar boils and the ammoniacal liquor and light oils distil off and are separated by decantation.

274,894. Acenaphthene Carboxylic Acids. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, July 24, 1926.

These acids are obtained by treating acetyl, diacetyl, chloracetyl, or dichloracetyl-acenaphthene or a substitution product with an alkaline hypochlorite solution, when chloroform escapes and the sodium salt separates. Several examples are given.

274,902. Acenaphthene Derivatives. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, July 24, 1926.

5-Acenaphthene-carboxylic acid is obtained as described in 274,894 above, and is dissolved in glacial acetic acid and again separated by cooling. Nitric acid is added and the mixture heated to obtain 6-nitro-5-acenaphthene-carboxylic acid. The acid may be dissolved in excess of ammonia, and crystallised ferrous sulphate added slowly. The mixture is filtered hot and treated with hydrochloric acid to obtain the hydrochloride of 6-amino-5-acenaphthene-carboxylic acid.

274,904. Catalytic Reactions. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, July 24, 1926.

The catalyst in finely divided form is circulated in the reaction space by a current of inert gas or a reagent gas, and is subsequently removed from the reaction products. The method is particularly suitable for the destructive hydrogenation of coal, tars, mineral oils, etc., for the synthesis of methanol and ammonia, and other pressure reactions. An example is given in which a mixture of hydrogen and heavy oil vapour passes through a porous fireproof plate carrying a molybdenum-chromium catalyst in the form of dust. The catalyst is whirled in the reaction space by the gases, and the reaction is effected at 460° C and 20 atmospheres pressure. The catalyst is subsequently removed by baffles or a wire screen.

275,145. Cyanamides, Carbon Disulphide, Phosphorus. H. Wittek, 4, Kautstrasse, Beuthen, Upper Silesia, Germany. International Convention date, July 27, 1926.

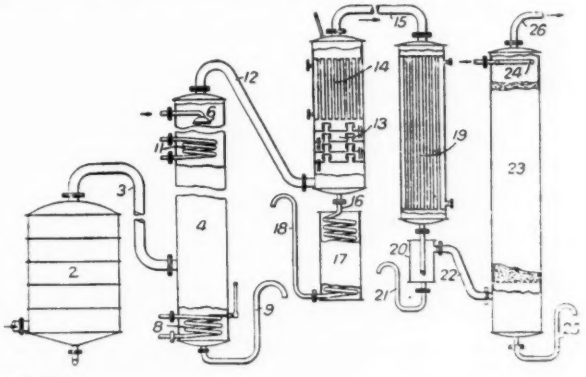
The extraction of metalloids from their compounds is combined with the nitrogenation of calcium, barium, or other carbide. The compounds are reduced by the heat or the gases evolved in the heating of the carbide, or the compounds may be mixed with the carbide and heated while nitrogen is introduced. The cyanamide obtained does not require pulverising, and is free from carbide. Phosphorus, arsenic, and antimony compounds in crude form are employed.

275,147. Dyes. Fabrique de Produits Chimiques Rohner Soc. Anon. Pratteln, Pratteln, near Basle, Switzerland. International Convention date, August 2, 1926.

Diazotised oxamic acids of the diamino-diphenyl series are coupled with aromatic amines and the products subjected to alkaline saponification. The monoazo dyes obtained can be tetrazotised and coupled with 2 : 3-oxynaphthoic arylides in substance or on the fibre, to obtain black trisazo dyes. In an example, the diazotised oxamic acids of benzidine and dianisidine are coupled with α-naphthylamine. Other examples are described.

275,158. Extracting Wood Distillation Products. H. Suida, 33, Jubiläumstrasse, Modling, Lower Austria. International Convention date, July 31, 1926.

The volatile products are sprayed with tar or tar oils in a separator 2, and the detarred gases pass through pipes 3 into



275,158

a column 4 into which cresol is sprayed. The temperature in the column is above 100° C. and is controlled by a cooling coil 11, while superheated steam is passed through the coil 8 to heat the lower part to 140°–145° C. The extract drawn off at 9 contains 90 per cent. acetic acid. Gases pass through pipe 12 to a column 13 having a condenser 14 to condense water vapour, remaining acetic acid, and any entrained cresol, which pass out through a condenser 17. Vapours pass at 70°–80° C. through pipe 15 to a condenser 19, where the wood spirit is condensed and discharged through a vessel 20. The gases pass to a tower 23 in which the residue of wood spirit is condensed.

275,213. Synthetic Drugs. Chemische Fabrik auf Actien, vorm. E. Schering, 170, Mullerstrasse, Berlin. International Convention date, August 2, 1926.

Iodophenolethers are condensed with metallic salts of iodo-oxybenzonitriles or metallic salts of iodophenolethers with iodobenzonitriles to obtain iodo derivatives of cyano-phenol ethers having the constitution R-O-R^1-CN where R and R^1 are iodo-substituted aryl residues. The preparation of 4-(4^1-methoxy-3^1-iodophenoxy)-3 : 5-diiodo-1-cyanobenzene is described. The products are intermediates in the manufacture of pharmaceutical preparations.

275,219. Synthetic Resins. British Thomson-Houston Co., Ltd., Crown House, Aldwych, London. (Assignees of R. H. Kienle, 405, Altamont Avenue, Schenectady, N.Y., U.S.A.) International Convention date, August 2, 1926.

Condensation products of a polyhydric alcohol and polybasic acid are made tough and flexible by the incorporation of substances such as indene, dibutyl phthalate, triphenyl and tricresyl phosphates, benzyl benzoate, benzyl alcohol, anthra-

cene, toluidine, aniline, cresol, etc. The compositions may be used as cements, or for making varnishes.

LATEST NOTIFICATIONS.

277,619. Process for recovering sulphuric acid from the acid-tar of benzol purification. Still, C. September 20, 1926.

277,628. Process for the manufacture of stable solutions of peroxides, persalts, and peracids. Oesterreichische Chemische Werke Ges September 16, 1926.

277,639. Salt or evaporating pans. Vereingte Schweizerische Rheinsalinen. September 15, 1926.

277,640. Process for the production of aluminium or aluminium alloys from alumina. Metallbank und Metallurgische Ges. Akt.-Ges. September 18, 1926.

277,651. Production of ozone. Siemens und Halske Akt.-Ges. September 14, 1926.

277,659. Process for dissolving coal and product produced thereby. Trent Process Corporation. September 14, 1926.

277,670. Manufacture of benzanthrone-carboxylic acids. I. G. Farbenindustrie Akt.-Ges. September 20, 1926.

277,697. Manufacture of alumina. Seailles, J. C. September 18, 1926.

277,701. Aluminium alloys. Schorn, H. September 18, 1926.

277,702. Aluminium alloys. Schorn, H. September 18, 1926.

277,710. Preparation for repelling gnats and like insects. I. G. Farbenindustrie Akt.-Ges. September 20, 1926.

277,714. Production of nitrogenised metallic compounds. Goldschmidt, R., and Coulier, S. September 20, 1926.

277,715. Production of nitrogenised metallic compounds. Goldschmidt, R., and Coulier, S. September 20, 1926.

Specifications Accepted with Date of Application

254,294. Benzanthrone derivatives, Process for preparing. I.G. Farbenindustrie Akt.-Ges. June 27, 1925.

254,303. Oils and fats, Process for reducing auto-oxidation of. A. Rechberg Ges. June 24, 1925.

264,830. Condensation products of aldehydes with ketones, Manufacture of. I.G. Farbenindustrie Akt.-Ges. January 19, 1926.

269,513. Cells with quicksilver cathodes for the decomposition of alkali metal chlorides. F. Gerlach. April 17, 1926.

271,888. Metallurgy of readily oxidisable metals such as magnesium. G. Michel. May 11, 1926.

271,805. Sulphuretted hydrogen, Process and installation for eliminating, from gases. C. Still. May 25, 1926.

273,263. Ethylsulphuric acid, Process for the preparation of. Compagnie de Bethune. June 24, 1926.

277,042. Light oil or motor fuel from crude mineral, or shale oil, or tar oils, or from carbonaceous materials, Process and apparatus for the preparation and recovery of. E. Schultz. March 9, 1926.

277,048. Finely divided solid materials, Manufacture and production of. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*) April 12, 1926.

277,098. Arylalkylethers which are alkylated in the nucleus, and their sulphonic acids, Process for the manufacture of. W. Carpmael. (*I.G. Farbenindustrie Akt.-Ges.*) June 8, 1926.

277,109–110. Anthraquinone derivatives, Process for the manufacture of. I.G. Farbenindustrie Akt.-Ges. R. E. Schmidt and R. Berliner. June 10, 1926. 277,109, addition to 244,462 and 277,110, addition to 244,463.

277,111. Converting difficultly soluble or insoluble colloidal carbohydrate ethers into new soluble products, Process for. W. Carpmael. (*I.G. Farbenindustrie Akt.-Ges.*) June 10, 1926.

277,127. Detinning tinned iron scrap and the like. M. A. Adam. June 16, 1926.

277,170. Alloys. T. D. Kelly. September 10, 1926.

277,199. Lead alloys. H. Yoshikawa. November 22, 1926.

277,210. Electromagnetic separation of ores, Apparatus for. A. Davies. June 8, 1926.

277,214–5. Distilling solid fuel, Method of. F. E. Hobson. January 10, 1927.

277,273. Liquid hydrocarbons and derivatives thereof from coal, tar, and the like, Production of. I.G. Farbenindustrie Akt.-Ges. March 13, 1926. Addition to 247,217 as modified by 249,155.

277,285. 3 : 4-diamino-benzoyl-*o*-benzoic acids, and a process of making the same. Newport Co. September 13, 1926.

277,317. Sulphonated cellulose derivatives, Manufacture of. I. G. Farbenindustrie Akt.-Ges. September 10, 1926.

277,325. Reducing oxides of metals, Method and apparatus for. J. W. Hornsey. September 8, 1926.

277,338. Dithiazyl disulphide, Method of preparing. Goodyear Tire and Rubber Co. September 7, 1926.

277,342. Benzanthrones and intermediate products, Manufacture of. I.G. Farbenindustrie Akt.-Ges. September 10, 1926.

277,357. Mixtures of mineral oil products and aliphatic alcohols, Process of and apparatus for. J. Kirschner. September 9, 1926.

277,371. Pigment dyes, Manufacture of. I.G. Farbenindustrie Akt.-Ges. September 11 1926

277,372. 1-methyl-2 : 5 : 6-trichloro-3-aminobenzene-4-sulphonic acid, Manufacture of. I.G. Farbenindustrie Akt.-Ges. September 11, 1926.

277,378. Separating benzol from the gases evolved during the making of coke, Method of. Ges. für Linde's Eismaschinen Akt.-Ges. September 13, 1926.

Applications for Patents

Alcock, H. E., Laporte, Ltd., B., and Weber, I. E. Manufacture of phosphoric acid, etc. 25,022. September 22.

Anglo-Persian Oil Co., Ltd., and Jameson, J. Treatment of hydrocarbon gases. 24,739. September 20.

Arnold, C. (Standard Development Co.). Conversion of hydrocarbon oils into lighter oils. 25,055. September 22.

Ashcroft, E. A. Metallurgy of ores, etc., containing tin. 24,649. September 19.

Bohme Akt.-Ges., H. T. Method for increasing wetting, etc., capacity of liquids. 24,778. September 20. (Germany, May 27.)

Brégeat, J. H. Manufacture of potassium carbonate, etc. 25,062. September 22.

British Metallic Packings Co., Ltd. Metallic packings. 25,151. September 23.

Canáls, E. Treatment of oils and fats. 24,867. September 21.

Carbide and Carbon Chemicals Corporation. Process of making absorptive carbon, etc. 25,130. September 23. (United States, May 25.)

Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Manufacture of tablets, etc. 24,902. September 21.

Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Manufacture of copper oxide ammonia cellulose solutions. 24,903. September 21.

Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Reduction of organic nitro compounds of the anthracene series. 25,049. September 22.

Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Manufacture of azo-dyestuffs. 25,050. September 22.

Coles, S. O. Cowper-. Sherardising. 24,566. September 19.

Coles, S. O. Cowper-. Protection of metallic surfaces from corrosion. 24,567. September 19.

Coulier, S., and R. Goldschmidt. Production of nitrogenised metallic compounds. 24,789, 24,790. September 20. (Belgium, September 20, 1926.)

Daniels, J. S. Production and activation of carbon. 25,045. September 22. (United States, September 22, 1926.)

Delco-Light Co. Methyl ether. 25,182. September 23. (United States, September 28, 1926.)

Germain, F. Distillation of organic calcium salts. 24,882. September 21. (France, September 23, 1926.)

Ges. für Teerverwertung, Spilker, A. L. H., and Zerbe, C. Splitting hydrocarbons, etc. 24,864. September 21. (Germany, September 23, 1926.)

Ges. für Teerverwertung, Spilker, A. L. H., and Zerbe, C. Splitting hydrocarbons, etc. 24,915. September 21. (Germany, October 18, 1926.)

Ges. für Teerverwertung, Spilker, A. L. H., and Zerbe, C. Splitting hydrocarbons, etc. 24,916. September 21. (Germany, October 20, 1926.)

Higgins, E. B., and United Water Softeners, Ltd. Manufacture of mineral pigments. 24,765. September 20.

Higgins, E. B., and United Water Softeners, Ltd. Treatment of water by precipitation process. 25,093. September 23.

I. G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of metal catalysts. 24,636. September 19.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of methyl alcohol. 24,642. September 19.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of aldehyde sulphoxylates. 24,643. September 19.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Low-temperature carbonisation of fuels. 24,644. September 19.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of solid calcium cyanide, etc. 24,645. September 19.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of formates. 24,646. September 19.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of oils of high viscosity, etc. 24,647. September 19.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of aldol. 24,648. September 19.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Process for destroying pests. 24,865. September 21.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Preparation of formaldehyde solutions. 25,002. September 22.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Bleaching montan wax. 25,003. September 22.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of plastic compositions, lacquers, etc. 25,004. September 22.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Recovery of products from oxidation products of hydrocarbons. 25,005. September 22.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.

ACID BORIC, COMMERCIAL.—Crystal, £34 per ton; powder, £36 per ton.

ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.

ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.

ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations: 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.

AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts

BISULPHITE OF LIME.—£7 10s. per ton, f.o.r. London, packages extra

BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.

BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)

CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.

COPPER SULPHATE.—£25 to £25 10s. per ton.

METHYLATED SPIRIT 61 O.P.—Industrial, 2s. 5d. to 2s. 10d. per gall. pyridinised industrial, 2s. 7d. to 3s. per gall.; mineralised 3s. 6d. to 3s. 10d. per gall.; 64 O.P., 1d. extra in all cases prices according to quantity.

NICKEL SULPHATE.—£38 per ton d/d.

NICKEL AMMONIA SULPHATE.—£38 per ton d/d.

POTASH CAUSTIC.—£30 to £33 per ton.

POTASSIUM BICHROMATE.—4½d. per lb.

POTASSIUM CHLORATE.—3½d. per lb., ex wharf, London, in cwt. kegs.

SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.

SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.

SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.

SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.

SODIUM ACETATE 97/98%.—£21 per ton.

SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.

SODIUM BICHROMATE.—3½d. per lb.

SODIUM BISULPHITE POWDER, 60/62%.—£17 10s. per ton delivered for home market, 1-cwt. drums included; £15 10s. f.o.r. London.

SODIUM CHLORATE.—2½d. per lb.

SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.

SODIUM PHOSPHATE.—£14 per ton, f.o.b. London, casks free.

SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.

SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.

SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.

SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.b. London, 1-cwt. kegs included.

Coal Tar Products

ACID CARBOLIC CRYSTALS.—7½d. to 8¼d. per lb. Crude 60's, 2s. 6d. to 2s. 7d. per gall.

ACID CRESYLIC 99/100.—2s. 9d. to 2s. 10d. per gall. 97/99.—2s. 4d. to 2s. 5d. per gall. Pale, 95%, 2s. 2d. to 2s. 3d. per gall. Dark, 90%, 1s. 9d. to 1s. 10d. per gall.; 95%, 2s. 1d. to 2s. 2d.

ANTHRACENE.—A quality, 2½d. per unit. 40%, £5 per ton.

ANTHRACENE OIL, STRAINED.—8d. to 8½d. per gall. Unstrained, 7½d. to 8d. per gall.

BENZOLE.—Crude 65's, 9½d. to 9¾d. per gall., ex works in tank wagons. Standard Motor, 1s. 1½d. to 1s. 2½d. per gall., ex works in tank wagons. Pure, 1s. 5d. to 1s. 6d. per gall., ex works in tank wagons.

TOLUOLE.—90%, 1s. 4d. to 1s. 9d. per gall. Firm. Pure, 1s. 6d. to 2s. per gall.

XYLOL.—1s. 3d. to 1s. 10d. per gall. Pure, 2s. 5d. per gall.

CREOSOTE.—Cresylic, 20/24%, 10d. to 11d. per gall.; middle oil, 8d. to 9d. per gall. Heavy, 8¾d. to 9d. per gall. Standard specification, 7¼d. to 7¾d. ex works. Salty, 7d. per gall. less 1½%.

NAPHTHA.—Crude, 9d. to 10d. per gall. Solvent 90/160, 9½d. to 10d. per gall. Solvent 95/160, 1s. 4d. to 1s. 5d. per gall. Solvent 90/190, 9½d. to 1s. 3d. per gall.

NAPHTHALENE CRUDE.—Drained Creosote Salts, £5 per ton. Whizzed or hot pressed, £8 per ton.

NAPHTHALENE.—Crystals, £11 10s. to £12 per ton. Quiet. Flaked, £12 10s. to £13 per ton, according to districts.

PITCH.—Medium soft, 84s. to 90s. per ton, f.o.b., according to district. Market firm.

PYRIDINE.—90/140, 5s. 9d. to 6s. 6d. per gall. 90/180, 4s. 6d. to 5s. per gall. Heavy, 4s. to 4s. 6d. per gall.

Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:

ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.

ACID ANTHRANILIC.—6s. per lb. 100%.

ACID BENZOIC.—1s. 9d. per lb.

ACID GAMMA.—4s. 9d. per lb.

ACID H.—3s. per lb.

ACID NAPHTHIONIC.—1s. 6d. per lb.

ACID NEVILLE AND WINTHER.—4s. 9d. per lb.

ACID SULPHANILIC.—8½d. per lb.

ANILINE OIL.—7½d. per lb. naked at works.

ANILINE SALTS.—7½d. per lb. naked at works.

BENZALDEHYDE.—2s. 3d. per lb.

BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.

BENZOIC ACID.—1s. 8½d. per lb.

o-CRESOL 29/31° C.—5½d. per lb.

m-CRESOL 98/100%.—2s. 7½d. per lb. Only limited inquiry.

p-CRESOL 32/34° C.—2s. 8¾d. per lb. Only limited inquiry.

DICHLORANILINE.—2s. 3d. per lb.

DIMETHYLANILINE.—1s. 11d. per lb.

DINITROBENZENE.—9d. per lb. naked at works. £75 per ton.

DINITROCHLORBENZENE.—£84 per ton d/d.

DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.

DIPHENYLAMINE.—2s. 10d. per lb. d/d.

a-NAPHTHOL.—2s. per lb. d/d.

B-NAPHTHOL.—11d. to 1s. per lb. d/d.

a-NAPHTHYLAMINE.—1s. 3d. per lb.

B-NAPHTHYLAMINE.—3s. per lb.

o-NITRANILINE.—5s. 9d. per lb.

m-NITRANILINE.—3s. per lb. d/d.

p-NITRANILINE.—1s. 8d. per lb.

NITROBENZENE.—6d. per lb. naked at works.

NITRONAPHTHALENE.—1s. 3d. per lb.

R. SALT.—2s. 2d. per lb.

SODIUM NAPHTHIONATE.—1s. 8½d. per lb. 100% basis d/d.

o-TOLUIDINE.—7½d. per lb.

p-TOLUIDINE.—2s. 2d. per lb. naked at works.

m-XYLIDINE ACETATE.—2s. 11d. per lb. 100%.

N. W. Acid.—4s. 9d. per lb. 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £9 10s. to £10 per ton. Good demand. Grey, £14 10s. to £15 per ton. Liquor, 9d. per gall.

CHARCOAL.—£6 to £9 per ton, according to grade and locality. Foreign competition severe.

IRON LIQUOR.—1s. 3d. per gall. 32° Tw. 1s. per gall. 24° Tw.

RED LIQUOR.—9d. to 10d. per gall.

WOOD CREOSOTE.—1s. 9d. per gall. Unrefined.

WOOD NAPHTHA, MISCIBLE.—3s. 11d. to 4s. 3d. per gall. Solvent, 4s. 3d. per gall.

WOOD TAR.—£4 to £5 per ton.

BROWN SUGAR OF LEAD.—£40 15s. per ton.

Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6½d. to 1s. 5½d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.

ARSENIC SULPHIDE, YELLOW.—1s. 9d. per lb.

BARYTES.—£3 10s. to £6 15s. per ton, according to quality.

CADMIUM SULPHIDE.—2s. 6d. to 2s. 9d. per lb.

CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.

CARBON BLACK.—5½d. per lb., ex wharf.

CARBON TETRACHLORIDE.—£45 to £50 per ton, according to quantity, drums extra.

CHROMIUM OXIDE, GREEN.—1s. 1d. per lb.

DIPHENYLGUANIDINE.—3s. 9d. per lb.

INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5½d. to 6½d. per lb.

LAMP BLACK.—£35 per ton, barrels free.

LEAD HYPOSULPHITE.—9d. per lb.

LITHOPONE, 30%.—£22 10s. per ton.

MINERAL RUBBER "RUBPRON."—£13 12s. 6d. per ton, f.o.r. London.

SULPHUR.—£9 to £11 per ton, according to quality.

SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.

SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.

THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb. carriage paid.

THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.

VERMILION, PALE OR DEEP.—6s. to 6s. 3d. per lb.

ZINC SULPHIDE.—1s. per lb.

Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.

ACID, ACETYL SALICYLIC.—2s. 3½d. to 2s. 5d. per lb.

ACID, BENZOIC B.P.—2s. to 3s. 3d. per lb., according to quantity. Solely ex Gum, 1s. to 1s. 3d. per oz., according to quantity.

ACID, BORIC B.P.—Crystal, 40s. to 43s. per cwt.; powder, 44s. to 47s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.
ACID, CAMPHORIC.—19s. to 21s. per lb.
ACID, CITRIC.—1s. 7d. to 1s. 8d. per lb., less 5%.
ACID, GALLIC.—2s. 8d. per lb. for pure crystal, in cwt. lots.
ACID, PYROGALLIC, CRYSTALS.—7s. 3d. per lb. Resublimed, 8s. 3d. per lb.
ACID, SALICYLIC, B.P.—1s. 2½d. to 1s. 4d. per lb.; Technical.—11½d. to 1s. per lb. Good demand.
ACID, TANNIC B.P.—2s. 8d. to 2s. 10d. per lb.
ACID, TARTARIC.—1s. 3½d. per lb., less 5%. Firm market.
AMIDOL.—9s. per lb., d/d.
ACETANILIDE.—1s. 6d. to 1s. 8d. per lb. for quantities.
AMIDOPYRIN.—8s 6d. per lb.
AMMONIUM BENZOATE.—3s. 3d. to 3s. 6d. per lb., according to quantity.
AMMONIUM CARBONATE B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimated: 1s. per lb.
ATROPINE SULPHATE.—9s. 6d. per oz.
BARBITONE.—5s. 9d. to 6s. per lb.
BENZONAPHTHOL.—3s. 3d. per lb. spot.
BISMUTH CARBONATE.—9s. 9d. to 9s. 10d. per lb.
BISMUTH CITRATE.—9s. 6d. to 9s. 9d. per lb.
BISMUTH SALICYLATE.—8s. 9d. to 9s. per lb.
BISMUTH SUBNITRATE.—7s. 9d. to 8s. per lb.
BISMUTH NITRATE.—5s. 9d. to 6s. per lb.
BISMUTH OXIDE.—13s. 9d. to 14s. per lb.
BISMUTH SUBCHLORIDE.—11s. 9d. to 12s. per lb.
BISMUTH SUBGALLATE.—7s. 9d. to 8s. per lb. Extra and reduced prices for smaller and larger quantities respectively; Liquor Bismuthi B.P. in W. Qts. 1s. 1d. per lb.; 12 W. Qts. 1s. per lb.; 36 W. Qts. 11½d. per lb.
BORAX B.P.—Crystal, 24s. to 27s. per cwt.; powder, 26s. to 29s. per cwt. according to quantity. Carriage paid any station in Great Britain, in ton lots.
BROMIDES.—Potassium, 1s. 9½d. to 2s. per lb.; sodium, 2s. to 2s. 2d. per lb.; ammonium, 2s. 2d. to 2s. 4d. per lb.; granulated, ½d. per lb. less; all spot. Large quantities at lower rates.
CALCIUM LACTATE.—1s. 2d. to 1s. 4d. per lb.
CAMPHOR.—Refined flowers, 2s. 11d. to 3s. 1d. per lb., according to quantity; also special contract prices.
CHLORAL HYDRATE.—3s. 2d. to 3s. 4d. per lb.
CHLOROFORM.—2s. 3d. to 2s. 7½d. per lb., according to quantity.
CREOSOTE CARBONATE.—6s. per lb.
ETHERS.—S.G. '730—1s. 1½d. to 10½d., drums; other gravities at proportionate prices.
FORMALDEHYDE.—£39 per ton, in barrels ex wharf.
GUAIACOL CARBONATE.—4s. 9d. to 5s. per lb.
HEXAMINE.—2s. 3d. to 2s. 6d. per lb.
HOMATROPINE HYDROBROMIDE.—30s. per oz.
HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz.
HYDROGEN PEROXIDE (12 VOLS.).—1s. 4d. per gallon, f.o.r. makers' works, naked. B.P., 10 vols., 2s. 3d. per gal. In carboys. Winchesters, 2s. 11d. to 3s. 9d. per gal.; 20 vols., 4s. 3d. per gal.; Winchesters, 5s. to 6s. 6d. per gal. Special prices for larger quantities.
HYDROQUINONE.—2s. 11d. to 3s. 2d. per lb., in cwt. lots.
HYPOPHOSPHITES.—Calcium, 3s. 6d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.
IRON AMMONIUM CITRATE.—B.P., 2s. 1d. to 2s. 4d. per lb. Green, 2s. 4d. to 2s. 9d. per lb. U.S.P., 2s. 2d. to 2s. 5d. per lb.
IRON PERCHLORIDE.—20s. to 22s. per cwt., according to quantity.
MAGNESIUM CARBONATE.—Light commercial, £31 per ton net.
MAGNESIUM OXIDE.—Light commercial, £62 10s. per ton, less 2½%; Heavy Commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.
MENTHOL.—A.B.R. recrystallised B.P., 17s. 9d. per lb. net; Synthetic detached crystals, 9s. to 12s. 6d. per lb., according to quantity; Liquid (95%), 11s. 3d. per lb.
MERCURIALS B.P.—Up to 1 cwt. lots, Red Oxide, 7s. 6d. to 7s. 7d. per lb., levig., 7s. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. 9d. to 5s. 10d. per lb., Powder, 5s. 2d. to 5s. 3d. per lb.; White Precipitate, Lump, 5s. 10d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s 4d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 10d. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. 1d. to 6s. 2d. per lb.; Sulph. nig., 5s. 10d. to 5s. 11d. per lb. Special prices for larger quantities.
METHYL SALICYLATE.—1s. 5d. to 1s. 9d. per lb.
METHYL SULPHONAL.—8s. 9d. to 9s. per lb.
METOL.—11s. per lb. British make.
PARAFORMALDEHYDE.—1s. 9d. per lb. for 100% powder.
PARALDEHYDE.—1s. 1d. to 1s. 4d. per lb.
PHENACETIN.—2s. 6d. to 2s. 9d. per lb.
PHENAZONE.—4s. to 4s. 3d. per lb.
PHENOLPHTHALEIN.—6s. 6d. to 6s. 9d. per lb.
POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—98s. per cwt. less 2½%.
POTASSIUM CITRATE.—B.P.C., 1911: 1s. 8d. to 1s. 11d. per lb.; U.S.P.: 1s. 11d. to 2s. 2d. per lb.
POTASSIUM FERRICYANIDE.—1s. 9d. per lb., in cwt. lots.
POTASSIUM IODIDE.—16s. 8d. to 17s. 2d. per lb. according to quantity.
POTASSIUM METABISULPHITE.—6d. per lb., 1-cwt. kegs included, f.o.r. London.
POTASSIUM PERMANGANATE.—B.P. crystals, 6d. per lb., spot.
QUININE SULPHATE.—1s. 8d. to 1s. 9d. per oz. bulk in 100 oz. tins.
RESORCIN.—3s. 9d. to 4s. per lb., spot.
SACCHARIN.—55s. per lb.; in quantity lower.
SALOL.—2s. 4d. per lb.
SODIUM BENZOATE, B.P.—1s. 8d. to 1s. 11d. per lb.
SODIUM CITRATE, B.P.C., 1911.—1s. 8d. to 1s. 11d. per lb., B.P.C., 1923—2s. to 2s. 1d. per lb. for 1-cwt. lots, U.S.P., 1s. 11d. to 2s. 2d. per lb., according to quantity.
SODIUM FERROCYANIDE.—4d. per lb., carriage paid.
SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£15 5s. per ton, d/d consignee's station in 1-cwt. kegs.
SODIUM NITROPRUSSIDE.—16s. per lb.
SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—90s. to 95s. per cwt. Crystals, 5s. per cwt. extra.
SODIUM SALICYLATE.—Powder, 1s. 7½d. to 1s. 9d. per lb. Crystal, 1s. 8½d. to 1s. 10d. per lb.
SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 2d. per lb.
SODIUM SULPHITE, ANHYDROUS.—£27 10s. to £28 10s. per ton, according to quantity. Delivered U.K.
SULPHONAL.—6s. 9d. to 7s. per lb.
TARTAR EMETIC, B.P.—Crystal or powder, 2s. 1d. to 2s. 2d. per lb.
THYMOL.—Puriss., 10s. to 10s. 3d. per lb., according to quantity. Firmer. Natural, 14s. 3d. per lb.

Perfumery Chemicals

ACETOPHENONE.—6s. 6d. per lb.
AUBEPINE (EX ANETHOL), 10s. 6d. per lb
AMYL ACETATE.—2s. per lb.
AMYL BUTYRATE.—5s. 3d. per lb.
AMYL SALICYLATE.—3s. per lb.
ANETHOL (M.P. 21/22° C.).—5s. 6d. per lb.
BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—2s.
BENZYL ALCOHOL FREE FROM CHLORINE.—2s. per lb. per lb.
BENZALDEHYDE FREE FROM CHLORINE.—2s. 6d. per lb.
BENZYL BENZOATE.—2s. 6d. per lb.
CINNAMIC ALDEHYDE NATURAL.—16s. 3d. per lb.
COUMARIN.—9s. 9d. per lb.
CITRONELLOL.—13s. 9d. per lb.
CITRAL.—8s. 3d. per lb.
ETHYL CINNAMATE.—6s. 6d. per lb.
ETHYL PHTHALATE.—2s. 9d. per lb.
EUGENOL.—8s. per lb.
GERANIOL (PALMAROSA).—18s. 6d. per lb.
GERANIOL.—6s. 6d. to 10s. per lb.
HELIOTROPINE.—4s. 9d. per lb.
ISO EUGENOL.—13s. 6d. per lb.
LINALOL.—Ex Bois de Rose, 15s. per lb. Ex Shui Oil, 10s. 6d. per lb.
LINALYL ACETATE.—Ex Bois de Rose, 18s. 6d. per lb. Ex Shui Oil, 14s. 6d. per lb.
METHYL ANTHRANILATE.—8s. 6d. per lb
METHYL BENZOATE.—4s. per lb.
MUSK KETONE.—35s. per lb.
MUSK XYLOL.—8s. per lb.
NEROLIN.—4s. 6d. per lb.
PHENYL ETHYL ACETATE.—12s. per lb.
PHENYL ETHYL ALCOHOL.—10s. 6d. per lb.
RHODINOL.—32s. 6d. per lb.
SAFROL.—1s. 6d. per lb.
TERPINEOL.—1s. 8d. per lb.
VANILLIN.—17s. 9d. per lb.

Essential Oils

ALMOND OIL.—11s. per lb.
ANISE OIL.—3s. per lb.
BERGAMOT OIL.—28s. per lb.
BOURBON GERANIUM OIL.—14s. 6d. per lb.
CAMPHOR OIL.—75s. per cwt.
CANANGA OIL, JAVA.—18s. per lb.
CINNAMON OIL LEAF.—6d. per oz.
CASSIA OIL, 80/85%.—7s. 6d. per lb.
CITRONELLA OIL.—Java, 1s. 10d. per lb., c.i.f. U.K. port for shipment over 1928. 1s. 7½d. per lb., prompt shipment from Java. Ceylon, pure, 1s. 8d. per lb.
CLOVE OIL.—5s. 6d. per lb.
EUCALYPTUS OIL, AUSTRALIAN.—2s. 3d. per lb.
LAVENDER OIL.—Mont Blanc, 38/40%, Esters, 17s. 6d. per lb.
LEMON OIL.—8s. per lb.
LEMONGRASS OIL.—4s. 6d. per lb.
ORANGE OIL, SWEET.—11s. 3d. per lb.
OTTO OF ROSE OIL.—Anatolian, 30s. per oz. Bulgarian, 75s. per oz.
PALMA ROSA OIL.—10s. 6d. per lb.
PEPPERMINT OIL.—Wayne County, 16s. 9d. per lb.; Japanese, 8s. 3d. per lb.
PETITGRAIN OIL.—7s. 9d. per lb.
SANDALWOOD OIL.—Mysore, 26s. 6d. per lb.; 90/95%, 16s. 6d. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to* THE CHEMICAL AGE *by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.

London, September 29, 1927.

THE improvement noted in our last issue has been fairly well maintained and the future outlook is brighter. Inquiry has improved, and buyers are now inclined to consider placing contracts forward for next year. Prices on the whole remain firm, and stocks relatively are light. Export business continues to show an improvement.

General Chemicals

ACETONE is in steady request and price continues firm at £62 per ton for small quantities, and slightly lower for larger orders.

ACID ACETIC is firm and unchanged at £37 to £38 per ton, demand fair.

ACID FORMIC.—Only a moderate business is reported at £46 to £47 per ton for 85% technical quality.

ACID LACTIC is unchanged at £42 to £43 per ton for 50% by weight.

ACID OXALIC.—Demand is somewhat small, but price continues very firm at round about £30 per ton.

ALUMINA SULPHATE is unchanged at £5 10s. for 17/18%, with only a moderate business passing.

AMMONIUM CHLORIDE.—The market continues stagnant, and price is sinking.

ARSENIC.—Unchanged.

BARIUM CHLORIDE has been in better demand, and is quoted at from £8 10s. to £9 per ton.

COPPER SULPHATE has quite a fair inquiry and business has been done at the parity of £24 per ton.

EPSOM SALTS are firm and are quoted at £4 7s. 6d. to £4 10s. per ton.

FORMALDEHYDE is active at £40 to £41 per ton, with a higher tendency.

LEAD ACETATE is steady at £42 10s. for white and £41 10s. for brown.

LEAD NITRATE is unchanged at £39 to £40 per ton, according to quantity and position.

LIME ACETATE is unchanged.

METHYL ACETONE continues in fair demand at £54 to £55 per ton.

POTASIUM CHLORATE.—Unchanged.

POTASSIUM PERMANGANATE is easy at about 6½d. per lb. for B.P., and this price might be eased for large quantities.

POTASSIUM PRUSSIATE has been in fair demand at from £60 to £62 per ton.

SODIUM ACETATE is in better demand and business has been done at £18 5s. to £18 10s. per ton, for spot material.

SODIUM BICHROMATE.—Unchanged at 3¼d. per lb.

SODIUM CHLORATE is in fair demand at £25 per ton, with only limited supplies offering.

SODIUM HYPOSULPHITE is unchanged at British makers' figures.

SODIUM NITRITE has been in better demand at £19 10s. per ton.

SODIUM PHOSPHATE has been a firm market and material is quoted at about £14 per ton on the spot.

SODIUM PRUSSIATE is unchanged at 4¼d. to 4½d. per lb.

SODIUM SULPHIDE is slow of sale at £11 10s. per ton.

ZINC SULPHATE has been a fair market at £14 per ton.

Coal Tar Products

There is little change to report in the values of coal tar products from last week, the market remaining quiet.

90's BENZOL is unchanged, and is quoted at 1s. 4d. to 1s. 5d. per gallon on rails, while the motor quality is quoted at 1s. 1½d. to 1s. 2½d. per gallon.

PURE BENZOL is worth about 1s. 7½d. to 1s. 8½d. per gallon on rails.

CREOSOTE OIL is firm, the price in the North being 7½d. per gallon on rails, while the price in London is about 8½d. per gallon.

CRESYLIC ACID is quoted at about 2s. 2d. per gallon ex works for the pale quality, 97/99%, while the dark quality, 95/97%, is quoted at about 1s. 11d. per gallon.

SOLVENT NAPHTHA remains weak, and can be bought at about 10d. per gallon on rails.

HEAVY NAPHTHA is worth about 11d. per gallon on rails.

NAPHTHALENES are steady at about £6 15s. to £7 per ton for the 74/76 quality, and at about £8 to £8 15s. per ton for the 76/78 quality.

PITCH is unchanged. To-day's value is 90s. to 95s. f.o.b. U.K. ports.

Latest Oil Prices

LONDON, September 28.—LINSEED OIL dull and 5s. to 7s. 6d. per ton lower. Spot, ex mill, £31 5s.; September, £30 2s. 6d.; October-December, £30 5s.; January-April, £30 15s.; May-August, £31 5s. RAPE OIL slow. Crude extracted, £43; technical refined, £45, naked, ex wharf. COTTON OIL quiet. Refined, common edible, £42; Egyptian crude, £36; deodorised, £44. TURPENTINE quiet and 6d. to 9d. lower. American, spot, 38s. 3d.; October-December, 39s.; January-April, 40s. 6d. per cwt.

HULL, September 28.—LINSEED OIL.—Spot to December, £31 per ton, naked. COTTON OIL.—Bombay crude, £34 10s.; Egyptian crude, £35; edible refined, £39; technical, £38; deodorised, £41 per ton, naked. PALM KERNEL OIL.—Crushed, 5½ per cent., £38 10s. per ton, naked. GROUNDNUT OIL.—Crushed extracted, £42; deodorised, £46 per ton. SOYA OIL.—Extracted and crushed, £34; deodorised, £37 10s. per ton. RAPE OIL.—Crude extracted, £43; refined, £45 per ton, net cash terms, ex mill.

Nitrogen Products

Export.—During the last week the demand for sulphate of ammonia has continued good and the price remains firm at £9 7s. 9d. per ton, f.o.b. U.K. port in single bags, for large quantities. The market has been featureless.

Home.—A few merchants are buying for prompt delivery. No doubt they will store the material for resale at the higher prices ruling during the spring months. A good many works are occupied with deliveries to fertiliser manufacturers.

Nitrate of Soda.—The nitrate market continues firm with prices tending upwards. It is reported that America has been a large buyer of this commodity. This increased demand, together with increased production in Chile, has caused a rapid appreciation in the value of the shares of the leading companies.

South Wales By-Products

THERE is no material change in the South Wales by-product market. There is a small speculation in pitch, created by anticipation of export activity next month. Heavy and solvent naphtha have only a small demand, and buyers are holding off in expectation of further falls in price. Creosote remains unaltered, the demand being small and prices unchanged. There is a steady demand for crude naphthalene, with prices ranging from £5 10s. to £6 10s. delivered. Patent fuel exports are increasing and all the works are kept busy with orders.

Patents in Irish Free State

THE new Industrial Property Act of the Irish Free State comes into force on October 1 as regards patents, designs, and trade-marks. Although a period of six months is allowed for taking steps to register rights under existing British patents, it appears probable that this period of grace applies only to the payment of the first fee, and there are many cases in which a renewal fee for a further year will have become due long before this period expires. In such cases the only safe course is to take steps at once to register the patent rights in Dublin, so that any further steps necessary to maintain the rights can be taken in good time.

River Tees Pollution

THE pollution of the River Tees was discussed by the Tees Fishery Board, at Darlington, on Monday, and it was decided to urge the Board of Agriculture and Fisheries to call a conference on the matter with the local sanitary authorities without delay. The board also adopted a suggestion of the pollution sub-committee that application should be made to the Department of Scientific and Industrial Research for funds to carry out remedial research work at the new laboratory at Middlesbrough. Lord Barnard (who presided, in the absence of Lord Gainford) said that with the help of the ironmasters they were now able to start testing samples of water in the river. It was reported that the enormous amount of fresh water due to the heavy rains had greatly improved the river, and the net fishermen had done much better than last year. There was no doubt that the pollution of the river was due in some respect to sewage.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to* THE CHEMICAL AGE *by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.

Glasgow, September 28, 1927.

DURING the past week, business in the heavy chemical market has been fairly active, inquiry both for home and export business still being fairly plentiful. Prices show little or no change since we last reported.

Industrial Chemicals

ACID ACETIC.—98/100%, £65 to £67 per ton, according to quality and packing, c.i.f. U.K. ports; 80% pure, £37 10s. per ton, ex wharf; 80% technical, £37 10s. per ton, ex wharf.

ACID BORIC.—Crystal, granulated or small flakes, £34 per ton. Powder, £36 per ton, packed in bags, carriage paid U.K. stations.

ACID CARBOLIC CRYSTALS.—Still in good demand and quoted price unchanged at about 8½d. per lb., f.o.b. U.K. ports.

ACID CITRIC, B.P. CRYSTALS.—Quoted price unchanged at 1s. 6d. to 1s. 6½d. per lb., less 5%, ex store. Continental now offered at 1s. 6⅜d. per lb., less 5%, ex wharf.

ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. 9d. per carboy. Dearsenicated quality, 6s. 3d. per carboy, ex works.

ACID NITRIC, 80%.—Quoted £23 5s. per ton, ex station, full truck loads.

ACID OXALIC.—Continental material unchanged at 3½d. per lb., ex wharf, spot material quoted 3¾d. per lb., ex store.

ACID SULPHURIC, 144°.—£3 12s. 6d. per ton; 168°, £7 per ton, ex works, full truck loads. Dearsenicated quality 20s. per ton more.

ACID TARTARIC, B.P. CRYSTALS.—In poor demand, but price unchanged at about 1s. 3d. per lb., less 5%, ex wharf.

ALUMINA SULPHATE, 17/18%, IRON FREE.—Spot material quoted £5 12s. 6d. per ton, ex store. On offer for early delivery at £5 5s. per ton, c.i.f. U.K. ports.

ALUM POTASH.—Lump quality quoted £8 5s. per ton, c.i.f. U.K ports. Crystal meal, 10s. per ton less. Lump quality on spot offered at £9 per ton, ex store.

AMMONIA, ANHYDROUS.—Unchanged at about 9d. per lb., carriage paid. Containers extra and returnable.

AMMONIA CARBONATE.—Lump, £37 per ton; powdered, £39 per ton, packed in 5 cwt. casks, delivered or f.o.b. U.K. ports.

AMMONIA, LIQUID, 880°.—Unchanged at about 2½d. to 3d. per lb. delivered, according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of English manufacture unchanged at £23 to £24 per ton, ex station. Continental about £19 10s. per ton, c.i.f. U.K. ports. Fine white crystals of continental manufacture now rather dearer at £17 10s. per ton, c.i.f. U.K. ports.

ARSENIC, WHITE POWDERED.—Still dearer at about £20 5s. per ton, ex wharf, prompt despatch from mines. Spot material quoted £21 5s. per ton, ex store.

BARIUM CARBONATE, 98/100%.—Continental material unchanged at about £7 10s. per ton, c.i.f. U.K. ports.

BARIUM CHLORIDE, 98/100%. — Large white crystals quoted £6 17s. 6d. per ton, c.i.f. U.K. ports.

BLEACHING POWDER.—Contract price to consumers £8 per ton, ex station, minimum 4-ton lots. Spot material, 10s. per ton extra. Continental on offer at £7 5s. per ton, ex wharf.

BORAX.—Granulated, £19 10s. per ton; crystals, £20 per ton; powder, £21 per ton, carriage paid U.K. ports.

CALCIUM CHLORIDE.—English manufacturers' price unchanged at £5 to £5 5s. per ton, ex store, with a slight reduction for contracts. Continental rather dearer at £3 15s. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Unchanged at about £3 10s. per ton, f.o.r. works or £4 12s. 6d. per ton, f.o.b. U.K. ports, for export.

COPPER SULPHATE.—British material quoted £24 5s. per ton, ex store, spot delivery. Continental about £23 per ton, ex wharf.

FORMALDEHYDE, 40%.—Unchanged at £38 per ton, c.i.f. U.K. ports. Spot material quoted £39 5s. per ton, ex store.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental quoted £2 15s. per ton, c.i.f. U.K. ports.

LEAD, RED.—Continental material now quoted £29 10s. per ton, ex store.

LEAD, WHITE.—Quoted £30 per ton, ex store.

LEAD ACETATE.—White crystals on offer from the Continent at £40 per ton, c.i.f. U.K. ports; brown about £38 15s. per ton, c.i.f. U.K. ports. Spot material on offer at £43 5s. per ton, ex store.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.

POTASH CAUSTIC.—88/92%, solid quality quoted £28 15s. per ton, c.i.f. U.K. ports; minimum 15-ton lots. Under 15-ton lots, £29 10s. per ton. Liquid, £15 per ton, minimum 15-ton lots. Under 15-ton lots, £15 7s. 6d. per ton, c.i.f. U.K. ports.

POTASSIUM BICHROMATE.—Unchanged at 4½d. per lb., delivered.

POTASSIUM CARBONATE, 96/98%.—Unchanged at £27 5s. per ton, ex wharf, prompt shipment. Spot material quoted £28 10s. per ton, ex store; 80/85%, calcined quality on offer at £20 10s. per ton, c.i.f. U.K. ports.

POTASSIUM CHLORATE.—Powdered quality, quoted £22 10s. per ton, c.i.f. U.K. ports. Crystals, 30s. per ton extra.

POTASSIUM NITRATE.—Quoted £20 per ton, c.i.f. U.K. ports. Spot material available at £21 per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 6½d. per lb. ex store, spot delivery.

POTASSIUM PRUSSIATE (YELLOW).—Unchanged at about 6½d. per lb., ex store, spot delivery. Offered from the Continent at 6⅜d. per lb., ex wharf.

SODA CAUSTIC.—Powdered, 98/99%, £19 7s. 6d. per ton; 76/77%, £15 10s. per ton; 70/72%, £14 10s. per ton, carriage paid station. Minimum, 4-ton lots on contract. Spot material 10s. per ton extra.

SODIUM ACETATE.—English material now quoted £21 per ton, ex store. Continental on offer at £17 5s. per ton, c.i.f. U.K. ports.

SODIUM BICARBONATE.—Refined recrystallised quality, £10 10s. per ton, ex quay or station. M.W. quality, 30s. per ton less.

SODIUM BICHROMATE.—Quoted 3¾d. per lb., delivered buyer's works.

SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station; powdered or pea quality, £1 7s. 6d. per ton; alkali, 58%, £8 12s. 3d. per ton, ex quay or station.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £9 10s. per ton, ex store. Minimum, 4-ton lots. Continental on offer at about £8 2s. 6d. per ton, ex wharf, prompt shipment. Pea crystals of British manufacture quoted £15 5s. per ton, ex station 4-ton lots.

SODIUM NITRITE, 100%.—Quoted £19 10s. per ton, ex store.

SODIUM PRUSSIATE (YELLOW).—In moderate demand and price unchanged at about 4¼d. per lb., ex store. Offered for prompt shipment from the Continent at 4¼d. per lb., ex wharf.

SODIUM SULPHATE (SALTCAKE).—Price for home consumption, £3 7s. 6d. per ton, ex works.

SODIUM SULPHIDE.—Prices for English material as follows: 60/62%, solid, now £10 10s. per ton; broken, £11 10s. per ton; flake, £13 5s. per ton. Crystals, 31/34%, £7 10s. per ton to £8 5s. per ton, according to quality delivered your works, minimum 4-ton lots on contract. Prices for spot delivery 5s. per ton higher for solid, 2s. 6d. per ton for crystals. Offered from the Continent at about £9 5s. per ton, c.i.f. U.K. ports; broken, 15s. per ton extra.

SULPHUR.—Flowers, £12 10s. per ton; roll, £11 per ton; rock, £11 per ton; floristella, £10 per ton; ground American, £9 5s. per ton, ex store. Prices nominal.

ZINC CHLORIDE.—British material, 98/100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98/100%, solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports; powdered, 20s. per ton extra.

ZINC SULPHATE.—Continental material now quoted £11 5s. per ton, ex wharf.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

Activated Carbon Exploitation

THE United States Department of Commerce states that it is reported in Germany that an American corporation has contracted with I.G. Farbenindustrie A.-G., the Metallbank and Metallurgische Gesellschaft, Frankfort-on-Main, and the Aussiger Verein (Czechoslovakia) to exploit German patents on activated carbon in the United States. At the same time, the French Société de Charbons Actives Urbaine has acquired rights on German patents for exploitation in Europe, outside Germany. It will be recalled that the Verein für Chemische Industrie, Frankfort-on-Main (wood distillation), recently entered into an agreement with the Dutch Allgemeene Norit Maatschappij with regard to activated carbon, hoping that the extension in the number of its products would partially offset the business lost through the competition encountered from synthetic methanol.

Manchester Chemical Market

(From Our Own Correspondent.)

Manchester, September 29, 1927.

A feature of the chemical market just now is the somewhat readier tendency on the part of users to look ahead so far as buying commitments are concerned, and there has been a fair number of inquiries relating to deliveries of the leading heavy chemicals over the coming year. Interest in forward business has been conspicuously absent for a long time, and the present improvement in this respect is regarded as an indication of greater confidence in the future. The demand on prompt and early delivery account is somewhat better than it has been, and prices, generally, are steady.

Heavy Chemicals

A fair business continues to be put through in bicarbonate of soda, and values are firm at round £10 10s. per ton to home buyers. Sulphide of soda is attracting little attention, but quotations are fairly steady at from £10 5s. to £10 10s. per ton for the 60-65 per cent. concentrated solid material and about £8 10s. for the commercial quality. Prussiate of soda is maintained at 4½d. per lb., and a moderate business has been reported. Inquiry for hyposulphite of soda continues slow, but there has been little change in the price levels, commercial offering at about £9 15s. per ton and photographic at £16 10s. Caustic soda is firm, and there is a fair demand both for home use and for shipment at from £14 10s. to £16 10s. per ton, according to quality. Saltcake is in moderate request at about £3 12s. 6d. per ton, with Glauber salts selling in limited quantities at about £3 5s. Nitrite of soda continues steady, with current values at round £19 per ton, and a fair amount of business is being put through. The demand for phosphate of soda is still on a quiet scale at £12 12s. 6d. per ton. Bichromate of soda is on offer at from 3d. to 3⅛d. per lb., and meets with a moderate inquiry. Chlorate of soda, however, remains quiet and easy at 2⅞d. per lb. Alkali is fully maintained at £6 15s. per ton, and sales are fairly active.

Carbonate of potash has been showing a slightly easier tendency, to-day's quotations ranging from £26 10s. to £26 15s. per ton, with the demand on a moderate scale. In the case of permanganate of potash buying interest is still rather slow, but values are about unchanged on the week at 5⅛d. per lb. for commercial and about 6¼d. per lb. for the B.P. quality. Yellow prussiate of potash is on offer at from 6¼d. to 6⅝d. per lb., and a moderate demand has been experienced. Caustic potash is well held at up to £31 per ton, according to quality, inquiry for this material being on a fairly active scale. With regard to chlorate of potash, there is still only a quiet trade passing, but prices are about unchanged at 2⅞d. per lb. Bichromate is steady in fair request at about 4½d. per lb.

Sulphate of copper is still attracting a moderate amount of attention at from £24 10s. to £25 per ton, f.o.b. The scarcity of arsenic is still sufficiently pronounced to keep values at a firm level, and round £18 per ton at the mines has been quoted here during the week for white powdered, Cornish makes. The lead products are easing off slightly, and there is relatively little business passing in these; nitrate is on offer at £37 15s., and acetate at about £39 10s. per ton for brown and £41 to £42 for white. Acetate of lime continues to firm up on short supplies, the brown material now being quoted at round £9 15s. per ton and the grey at £16 to £16 5s.

Acids and Tar Products

Prices of citric acid keep fairly steady at from 1s. 6¼d. to 1s. 6¾d. per lb., but buying interest recently has been slow. Tartaric acid also fails to attract any important business, and current values are at about 1s. 3d. per lb., or a shade less than this. Oxalic acid keeps steady and meets with a moderate demand at 3¼d. per lb. Acetic acid continues in fair request at £36 to £37 for the 80 per cent. commercial and £67 per ton for the glacial.

The demand for pitch is of moderate extent, and values are on the easy side at from £4 5s. to £4 7s. 6d. per ton, f.o.b. Creosote oil is steady and in fair inquiry at about 7⅝d. per gallon. In the case of solvent naphtha the demand is for relatively small quantities and prices are easy at from 11½d. to 1s. per gallon. There is not much business passing in the case of carbolic acid, and values are showing an easier tendency, with crude quoted at about 2s. 5d. per gallon and crystals at 8d. per lb.

Reid Power Development Co. Meeting

The statutory meeting of the Reid Power Development Co., Ltd., which was formed three months ago to develop and bring to the commercial stage certain patents for the production of fuel gas from the process of lime burning, was held inLondon on Friday, September 23. The chairman, Lt.-Col. the Hon. H. S. Davey, who presided, stated that terms had been agreed for acquiring a lease of suitable premises at Hammersmith. They had purchased at an advantageous price the plant at Heathfield, which was installed by Dr. Reid. This plant was being moved to Hammersmith and much of it could be used in the demonstration plant which was to be set up there. A certain amount of experimenting would be necessary, as both Professor Low and Mr. Bamber were of opinion that the retort in the old kiln was capable of considerable improvement as regards its design and position. That plant would be installed and ready to demonstrate their process on a commercial scale in about six weeks' time. They would perhaps want him to look farther ahead and to say something of their ideas for the future. That small company was not destined to a long life. The directors hoped that in six or eight months' time the licences under which they used the patents would be transferred to a much larger and more important company, to be formed for the purpose of their commercial exploitation. The directors had a high opinion of the commercial value of their process, an opinion which was shared by such eminent authorities as Professor Low and Mr. Bamber, and other well-known engineers.

The Export Credits Guarantee Scheme

Mr. A. M. Samuel, Secretary of the Department of Overseas Trade, will meet members of the trade Press on Monday, October 3, for the purpose of explaining the latest developments in the working of the Government's export credits guarantee scheme. The scheme, embodying a larger measure of insurance than that provided for in the old export credits scheme, was introduced in July, 1926, as the result of the recommendations of an expert committee appointed by Mr. Samuel early that year to examine the question of insurance against bad debts in the export trade. In July, 1926, Mr. Samuel met members of the general Press at the Department of Overseas Trade, and explained the conditions governing the new scheme. Since that time, in the light of experience gained, various measures have been taken tending to make the scheme of the greatest possible use to the business community. The scheme is being increasingly employed and has aroused much interest from time to time, but Mr. Samuel feels that the valuable facilities that it affords require to be even yet more widely known.

Colour Standardisation in the Paint Industry

The Oil and Colour Chemists' Association will hold its opening meeting on Wednesday, October 12, in the rooms of the Royal Society of Arts, London, at 8 p.m., when there will be a discussion on "Colour Standardisation and Testing in the Paint and Colour Industry." Contributions to the discussion have been promised by Dr. C. Beavis, Professor L. C. Martin, Dr. S. G. Barker (of the Woollen Research Association), Mrs. F. E. Lovibond, Mr. J. Guild (of the National Physical Laboratory), and Mr. R. S. Horsfall (of Imperial Chemical Industries), together with representatives of the Federation of Master Printers, the Institute of British Decorators, and the London Association of Master Decorators.

Effect of Sunlight on Indigo

Miss Eva Hibbert, of the Manchester College of Technology, has been carrying out experiments on the effect of sunlight on materials that have been indigo dyed, and has shown that fading of colour is not caused by any reduction of the fabric, but by a definite change in the substance used in the colouring. Exploring on these lines, Miss Hibbert had found a method in the case of indigo of separating this new substance, and has found it to be isatin. By systematic work on these lines, the cause of fading can be traced to its source and better methods of making colours fast may be found. At present, fadeless fabrics manufactured from colouring materials which do not react to sunlight are rather expensive.

Company News

BARRY, OSTLERE AND SHEPHERD.—An interim dividend of 5 per cent. has been declared on the ordinary shares.

BRITISH DRUG HOUSES, LTD.—The directors announce the quarterly dividend of 1¼ per cent. on the preference shares.

COPPER, MCDOUGALL AND ROBERTSON.—The company announce an interim dividend of 7 per cent. on the ordinary shares.

ELLIOTT'S METAL CO.—A dividend of 10 per cent. is announced on the ordinary shares for the past year, carrying forward £55,869.

GLENBOIG UNION FIRE-CLAY CO.—After providing for depreciation, the directors recommend a dividend of 10 per cent., less tax, for the year ended August last.

ENGLISH CHINA CLAYS, LTD.—The payment of an interim dividend on the ordinary shares is to be made on October 3, at the rate of 3 per cent. per annum for the half-year ended June 30, 1927.

BURT, BOULTON AND HAYWOOD.—After writing off £15,000 to depreciation account, £4,077 to debenture redemption reserve, and £6,920 off the expenses of the debenture stock and preference share issues, the net profit for the year ended June 30 last amounted to £62,582. It is proposed to pay a balance dividend on the ordinary shares of 5 per cent., making 10 per cent., less tax, for the year, or the same as for the preceding year; also to make a balance distribution of £456 on the workers' certificates (making £956 for the year), and to place £5,000 to general reserve, carrying forward £15,984, compared with £16,657 brought in.

BRITISH CYANIDES.—A balance sheet is issued by the British Cyanides Co. as at June 30 last. It shows a total of £131,786, as against £460,791 shown by the previous balance sheet (April 30, 1926), a capital reduction scheme having been carried into effect in the interval, receiving court confirmation on March 8 last. The new issue of shares, states the report, was subsequently offered to the shareholders, and 273,989 were subscribed. As this was less than half of the number of shares offered, the underwriters were called upon to take up the full number underwritten, so that a total number of 946,827 ordinary shares of 2s. each have been subscribed. Down to June 30 last 14,920 preference shares of 2s. each had been converted into ordinary shares. The balance sheet shows a debit on profit and loss account of £946.

An Artificial Silk Cartel

Analysis of International Agreements

CONSIDERABLE progress in the direction of creating a cartel for the producers of artificial silk has (states the *Yorkshire Post*) been made during the last few months. The first step was taken by the German producers, who united in order to eliminate competition and to ensure a greater and more economical yield by the application of the principle of rationalisation. The next step was the triple alliance of the Courtauld (British), Glanzstoff (German), and Snia (Italian) groups which, according to the *Nord Textile*, united for the purposes of research and experiment, specialisation in manufacture and the distribution of markets. Following this, an agreement was reported between Glanzstoff and Tubize of Belgium, who are associated with the International Holdings group. It is concluded from these combinations that an international silk cartel is no longer a project but a fact, for the organ of the French textile industries declares that, with the exception of the Celanese companies of Great Britain and America and half a dozen French firms forming the "Comptoir des Textiles Artificiels," there is no important producer outside the cartel. An exact analysis of the numerous ramifications of the agreements entered into cannot be given by the *Nord Textile*, which points out that the conventions are often secret, and that even when they are published their real character is not sufficiently indicated. Nor can the future programme of the cartel be indicated, but it is affirmed without fear of contradiction that the principal aim is the distribution of markets and the maintenance of prices which the producers may consider satisfactory.

New Chemical Trade Marks

Applications for Registration

This list has been specially compiled for us from official sources by Gee and Co., Patent and Trade Mark Agents, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks and Designs.

Opposition to the Registration of the following Trade Marks can be lodged up to October 28, 1927.

"FERTIMAX."

483,136. Class 2. Fertilisers. Stockton-on-Tees Chemical Works, Ltd., Bowesfield Lane, Stockton-on-Tees, Durham; manufacturers. August 11, 1927.

"DAPID."

483,137. Class 4. Wood distillation products, namely, wood tar and wood pitch. Paul Danischewsky, Bredgate 68, Copenhagen K., Denmark; manufacturer. August 11, 1927.

Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

DISINFECTANT POWDER.—The South African Railways and Harbours Administration are inviting tenders, which will be received up to October 27, for disinfectant powder required during 1928. (Reference B.X. 3,846.)

SOAPS.—A firm in Baden, Austria, desires to secure the representation of British manufacturers. (Reference No. 264.)

TIN.—H.M. Consul at Sarajevo reports that a local firm is anxious to receive offers from British firms for the supply of five tons of tin in bars. (Reference A.X. 5,261.)

MANGANESE.—A firm of commission merchants at Kobe, Japan, are interested in the importation of manganese metal, ferro tungsten, ferro titanium, manganese copper, and phosphor copper. (Reference A.X. 5,243.)

Tariff Changes

MAURITIUS.—Proclamation 31 adds sulphate of soda to the list of substances which, when imported for the purpose of being used in local manufactures, may be admitted at the rate of Ro.05 per 100 kilogs. under Tariff No. 81 (iv).

ITALY.—A Decree Law adds the following to the list of goods which may be imported into Italy under the "temporary importation" regulations:—benzol, toluol and naphthalene, for the manufacture of chemical products and explosives; nitrocellulose varnishes, and their solvents.

Report of the Government Chemist

THE report of the Government Chemist on the work of the Government Laboratory for the year ending March 31, 1927 (pp. 42, 1s. 3d.), has just appeared. The total number of samples examined in the course of the year was 469,642, as compared with 445,606 in the preceding year. The new duties on silk and artificial silk necessitated the examination of over 22,000 samples during the year, and the work in connection with the Safeguarding of Industries Act again involved the examination of 10,000 samples. A full review of the report will appear in next week's issue of THE CHEMICAL AGE.

German-Japanese Dyestuff Agreement

THE treaty signed between Germany and Japan at Tokio a short time ago contained the following points among others: (1) Regarding some 65 kinds of dyestuffs, and intermediate dyestuffs mentioned in the table attached to the agreement, Germany may import the same to Japan only when no opposition is raised in Japan; (2) If Japan become able to manufacture any dye, the quality of which is equal to that mentioned in the table attached to the agreement, Japan shall add such dye to the above-mentioned table; (3) German dyestuffs shall be imported through Yokohama and Kobe only.

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Mortgages and Charges

*[NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.]*

BEACON DYEING CO., LTD., Huddersfield. (M., 1/10/27.) Registered September 14, agreement securing £3,500, to R. Beauland and Co., Ltd., Spring Grove Mills, Clayton West; charged on Calder Dyeworks and 1, 3, and 5, Dyehouse Lane, Brighouse, and land adjoining. *Nil. April 9, 1926.

CROCKATT (JOHN), LTD., Leeds, dyers and cleaners. (M., 1/10/27.) Registered September 19, £10,000 mortgage and charge, to J. H. Armitage, Hookholme, Park View Crescent, Roundhay, Leeds, solicitor; charged on Yorkshire Dyeworks, Stoney Rock Lane, Leeds, with plant, etc. *£11,463. February 9, 1927.

SMITH, HUGHES AND CO., LTD., London, E.C., chemical merchants. (M., 1/10/27.) Registered September 14, £1,500 debentures (filed under sec. 93 (3) of the Companies (Consolidation) Act 1908), present issue £1,000; general charge. *Nil. March 14, 1927.

Satisfaction

CUSSONS, SONS AND CO., LTD., Manchester, chemists. (M.S., 1/10/27.) Satisfaction registered September 16, £10,935, registered October 3, 1924.

London Gazette, &c.

Partnership Dissolved

SPEEDO CO. (Arthur Thomas WILLIS and James Hodgskin PHILLIPS), 23, Bennington Street, Cheltenham, manufacturers, wholesale and retail distributors of a preparation known as Speedo Cleanser, by mutual consent, August 29, 1927. The business will be carried on by A. T. Willis. Debts received and paid by A. T. Willis.

Receivership

WILSON AND WHITE, LTD. (R., 1/10/27.) E. A. Hill, associated accountant, of 329, Essex Road, N.1, was appointed receiver and manager on September 6, 1927, under powers contained in debenture dated April 10, 1924.

New Companies Registered

BARIUM CONSOLIDATED, LTD., Anglorient House, 31 and 33, Bishopsgate, London, E.C.2. Registered as a "public" company on September 23. Nom. capital, £175,000 in 875,000 shares of 4s. each. To acquire in any part of the world any concessions, grants, licenses, etc., for any mining objects, or mines, etc., containing barytes, lead, zinc, tin, precious stones, gold, silver, wolfram, copper, iron, oil, coal, and other products, and to carry on the business of producers, manufacturers and exporters of and dealers in crude and ground barytes, zinc, lithopone, barium sulphate and all chemical compounds and other substances and materials derived from barytes, miners, mine owners, metallurgists, etc. Directors: Sir William D. Henry, Kt., Sir Godfrey B. H. Fell.

LAUNDRY SUPPLIES, LTD. Private company. Registered September 22. Capital, £1,000 in £1 shares. To acquire the business of a laundry supplier and chemical manufacturer and merchant now carried on by E. R. Hillary at 53, Cornbrook Road, and Wellington Chambers, High Street, both in Manchester, as the "Laundrizone Company." Directors: E. R. Hillary, Wood Farm, Edale, Derbyshire; J. R. Hampson.

PROCESS DEVELOPMENTS CO., LTD., 39, Grosvenor Place, London, S.W.1. Registered September 22. Nom. capital, £1,000 in 1s. shares. To acquire any patent or process for refining, separating and purifying mineral, vegetable and other oils, etc. Directors: Lt.-Col. W. A. Bristow, Capt. W. M. Robson.

SANEWAY, LTD. Private company. Registered September 26. Capital, £2,500 in £1 shares. To acquire from T. R. Palmer the benefit of certain British, Colonial, and foreign letters patent in relation to a means of closing, sealing, and drawing off the contents of drums, cans, and similar containers, and also the benefit of the registered trade mark "Saneway," and to carry on the business of iron, steel, brass, copper, and general metal founders, converters, smelters, forgers, rollers, etc. Directors: T. R. Palmer (chairman); T. Palmer, both of "Trelina," Rothley Plain, Leics. (both permanent joint governing directors).

SILICAL WATER SOFTENERS, LTD., 1-3, Sun Street, Finsbury Square, London, E.C. Registered September 21. Nom. capital, £100 in £1 shares. Analytical chemists, manufacturers of and agents for apparatus, plant and machinery for the supply, purification, softening, cleansing, aerating, and storage of water for all purposes, including mechanical indicating and recording apparatus, pumping and elevating machinery, storage receptacles, filter beds, etc. Directors: E. F. Bays, L. G. F. Dolly, G. F. C. Gordon, and M. E. Ricketts.

VARTEG BRICK AND FIRECLAY CO., LTD. Private company. Registered September 26. Capital, £5,000 in £1 shares. To carry on the business of manufacturers of and dealers in bricks, tiles, clay and ceramic ware, etc., manufacturing chemists, etc. Directors: D. C. Rees, Exchange Buildings, Swansea, and T. R. Davies.

Midland Flint Glass Trade Improvement

THE flint glass trade of Birmingham and Stourbridge has lately shown a good deal of improvement. Having regard to the acuteness of foreign competition, the industry has during the past two years been largely reorganised, and it is stated that there is now less wastage in man-power than formerly. In the medium glass trade and in utility and decorative goods the outlook is distinctly more encouraging; at the moment these branches show more vitality. The best English cut glass is still pre-eminent. People will pay the price of the most richly decorated pieces of fine glass.

Benn Brothers' Other Journals

THE CABINET MAKER.—Special photos of Lord and Lady Islington's Town House; Photos of Lady Maud Warrender's Town House; Furnishers' Autumn Booklets; Colour Plate of a Modern Bedroom.

DISCOVERY.—"Further Thoughts on Bird Migration," by Cdr. B. Ackworth; A Review of the British Association Meeting; The Treatment of Infection: A Chemical Problem; Letters of Gertrude Bell; Wireless Developments.

THE ELECTRICIAN.—Autumn Trade Promotion Number: "How I would Sell Vacuum Cleaners," by Mrs. Christine Frederick; "The Electrical Contractor's Window," by A. E. Hammond; Domestic Appliances for the Autumn Trade; "Public Steam Heat from Power Station Boilers," by E. Kilburn Scott.

THE EXPORT WORLD.—"Organising an Export Department," by Gilbert Rich, President of the British Export Society; World Motor Markets Analysed; The Question of Credits in European Markets; Music of the Month: The Selling Side and Around the Trade.

THE FRUIT GROWER.—Programme of "Our Day" at Imperial Fruit Show; West Cambs' Fine Display; Manures and Keeping Qualities of Apples.

THE GAS WORLD.—Monthly By-products Coking Section; Coking Practice on the Continent; Cartoon by Wallace Coop; A Belgian view of the Future of the Gas Industry.

GARDENING ILLUSTRATED.—"Blue Poppies in their Wild Haunts," (Illustrated), by Capt. Kingdon Ward; "Canada in Essex," by Viscountess Byng of Vimy; Antirrhinums: Growing Plants a Second Year; Holland Park Show.

THE HARDWARE TRADE JOURNAL.—54th Autumn Annual: The Brightening Trade Outlook; Autumn Shop Windows; Seasonal Selling Lines for the Hardware Retailer; New Wireless Goods; Electric Welding in Hardware Production; Measuring the Cutting Power of Cutlery.

THE TIMBER TRADES JOURNAL.—Soft wood supplies in North Western Europe; Congestion at the Surrey Commercial Docks; Transport: Points about the Foden: An Ideal Combination: For Handling Long Lengths; Breaking in Big Band-saws.